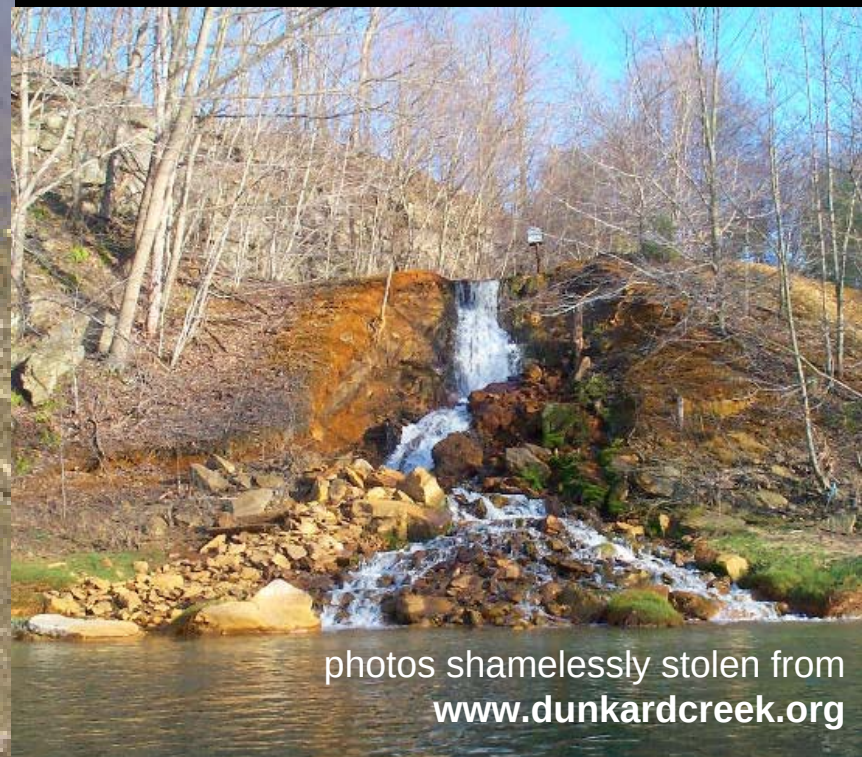
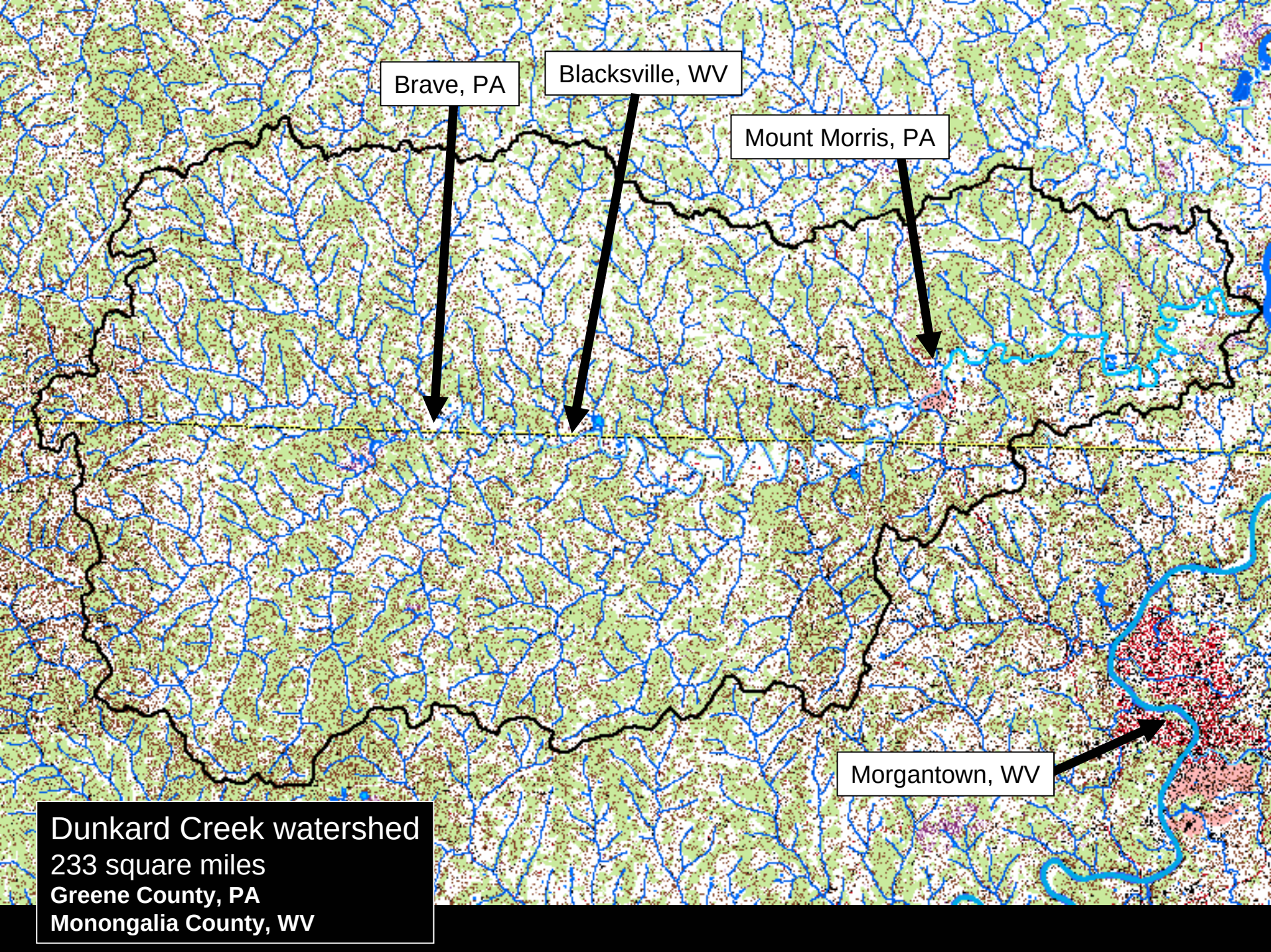
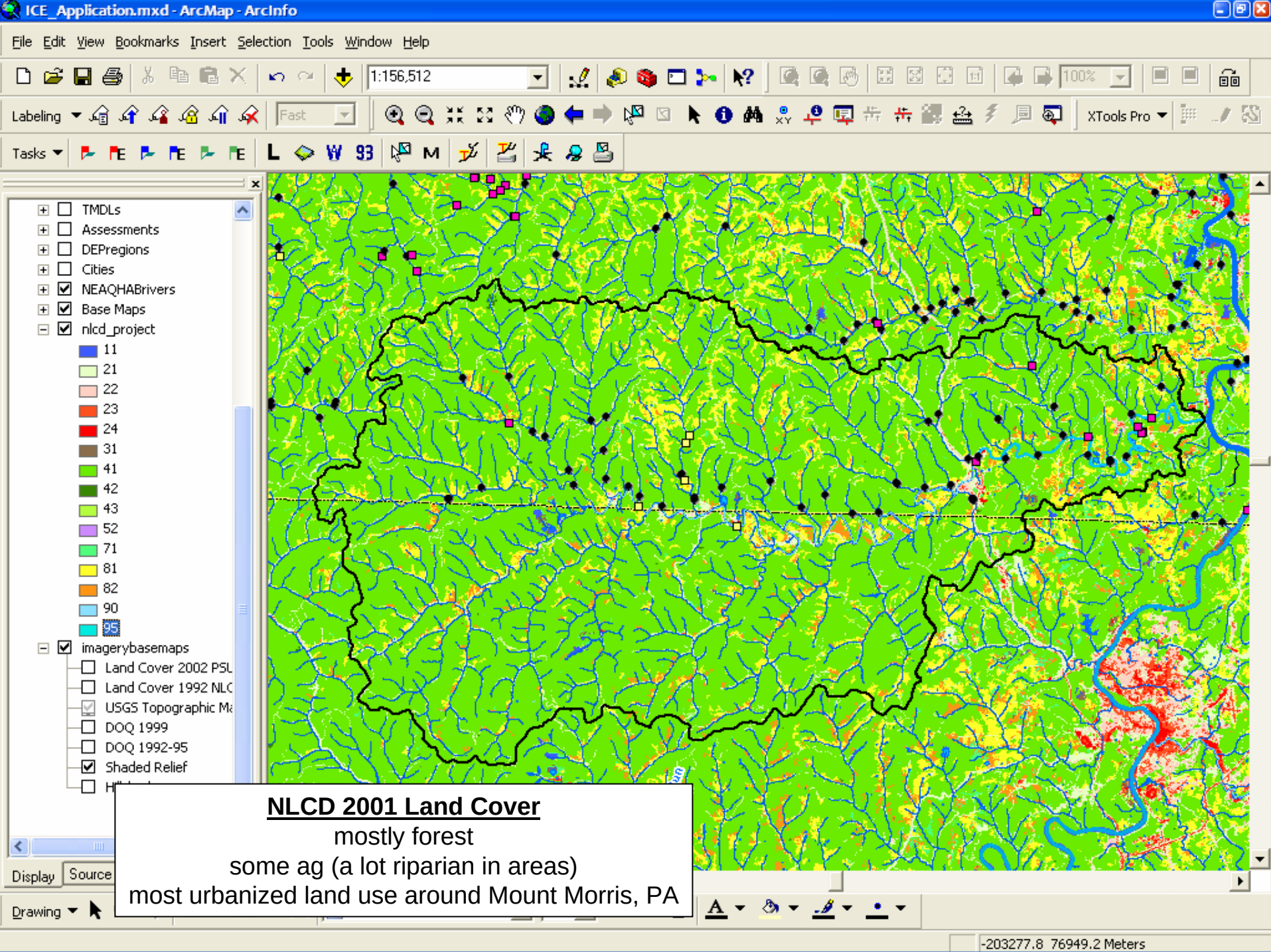
Dunkard Creek: one story



photos shamelessly stolen from
www.dunkardcreek.org


Brave, PA
Blacksville, WV
Mount Morris, PA
Morgantown, WV
Dunkard Creek watershed
233 square miles
Greene County, PA
Monongalia County, WV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71
81
82
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95
imagerybasemaps
Land Cover 2002 PSL
Land Cover 1992 NLC
USGS Topographic Ma
DOQ 1999
DOQ 1992-95
Shaded Relief
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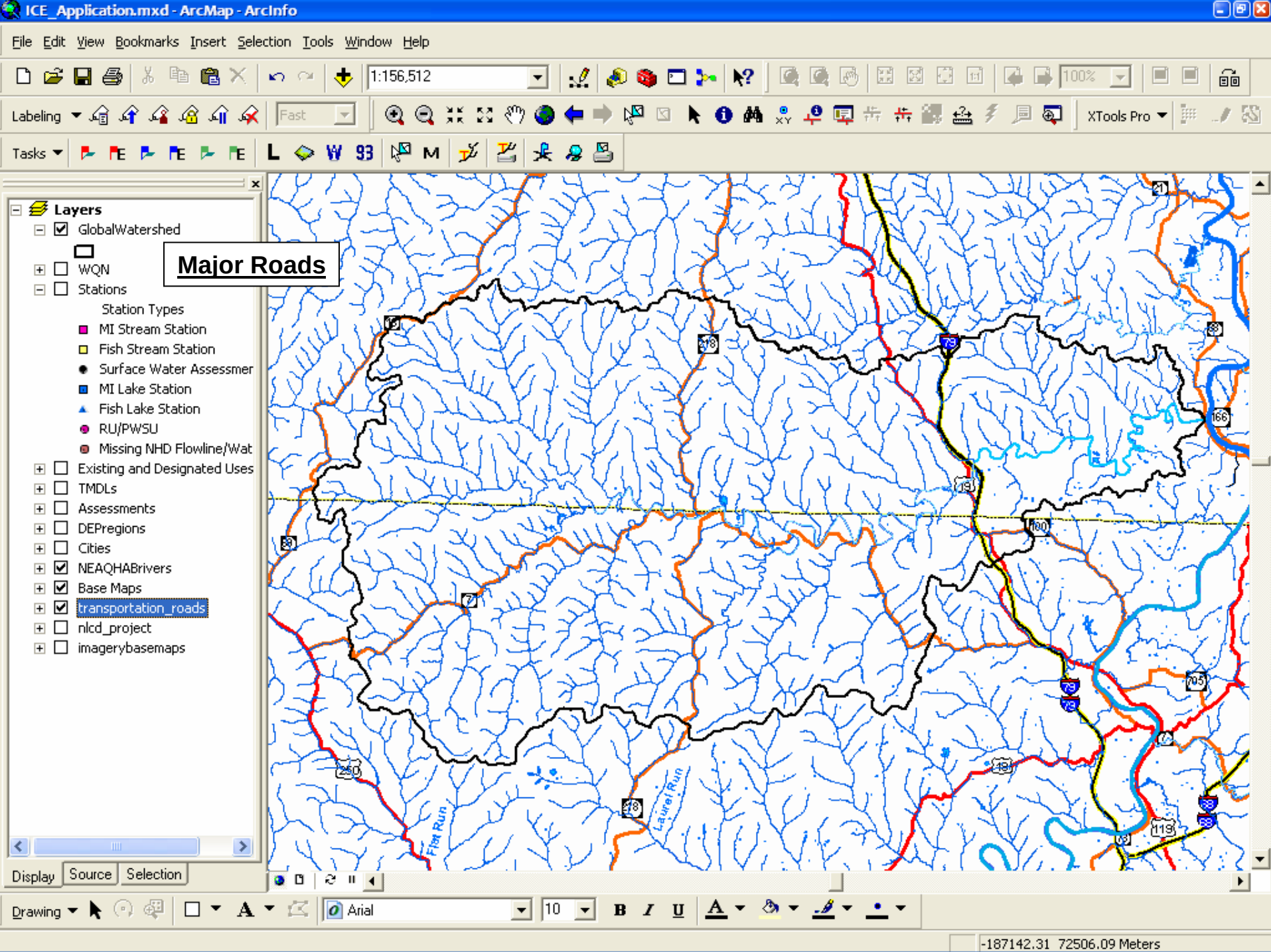
-203277.8 76949.2 Meters
NLCD 2001 Land Cover
mostly forest
some ag (a lot riparian in areas)
most urbanized land use around Mount Morris, PA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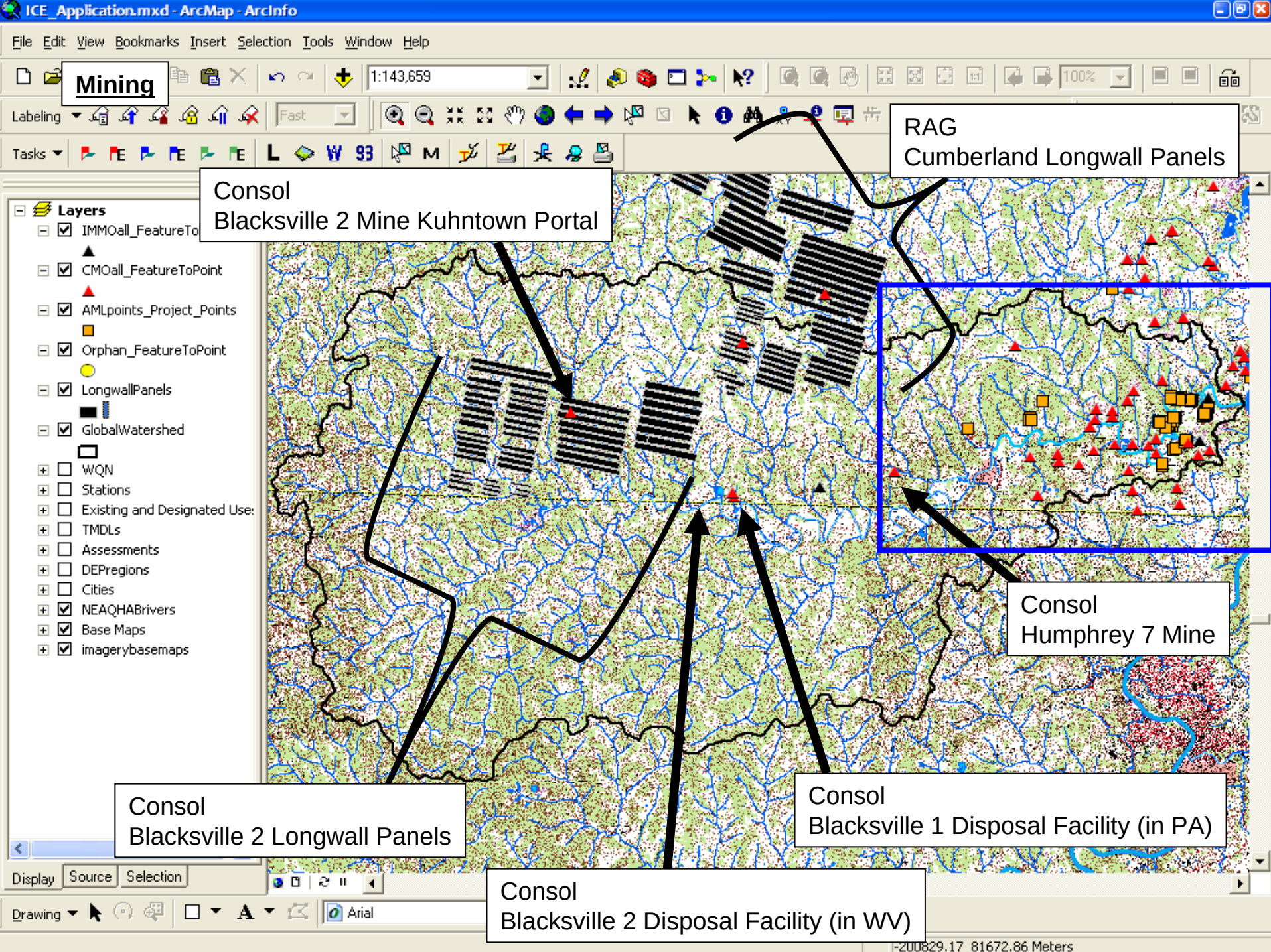
-187142.31 72506.09 Meters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Mining
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Labeling
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Layers
IMMOall_FeatureTo
CMOall_FeatureToPoint
AMLpoints_Project_Points
Orphan_FeatureToPoint
LongwallPanels
GlobalWatershed
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Stations
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
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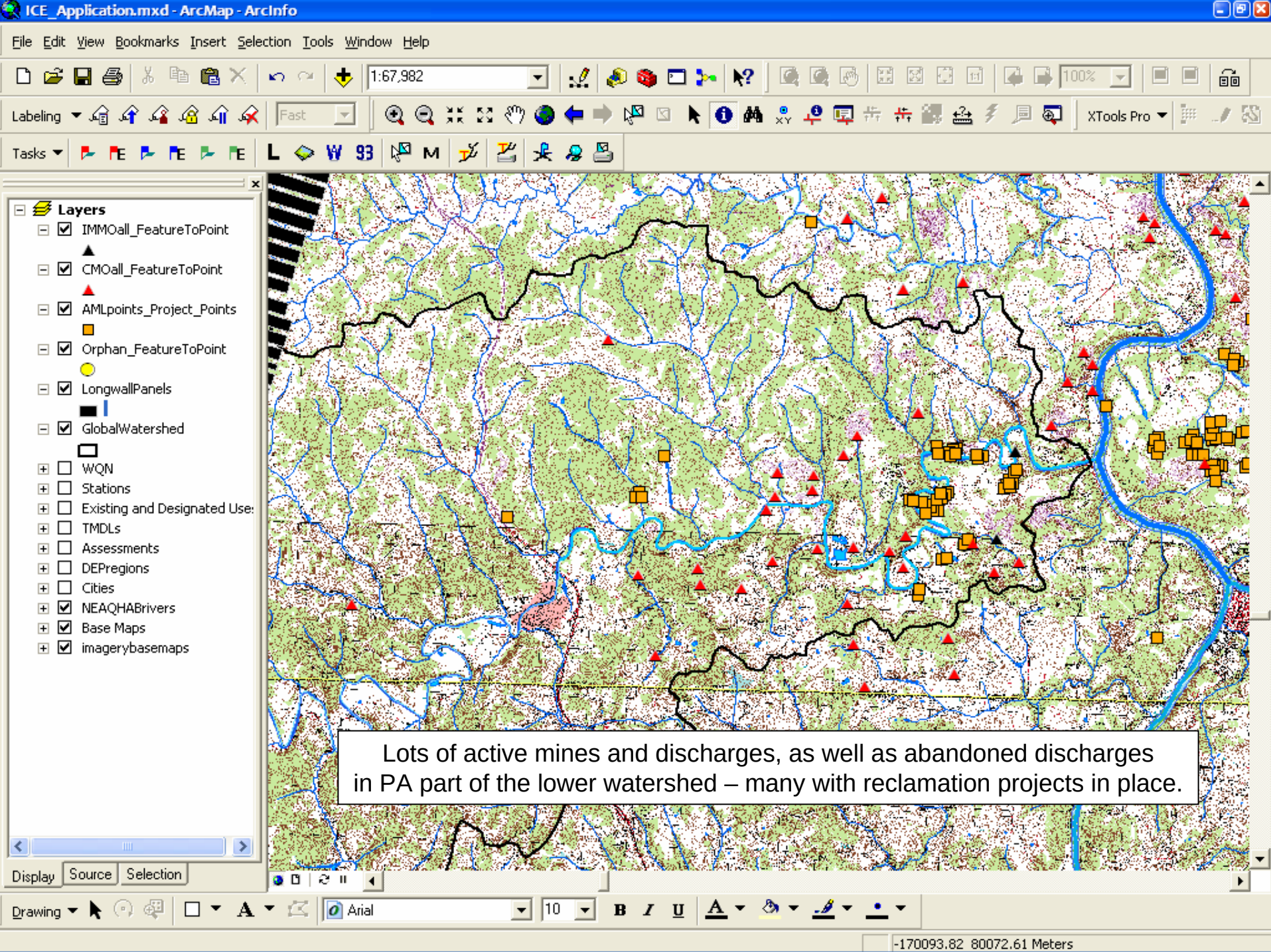
Selection
Drawing
Arial
RAG
Cumberland Longwall Panels
Consol
Blacksville 2 Mine Kuhntown Portal
Consol
Humphrey 7 Mine
Consol
Blacksville 2 Longwall Panels
Consol
Blacksville 1 Disposal Facility (in PA)
Consol
Blacksville 2 Disposal Facility (in WV)
-200829.17 81672.86 Meters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CMOall_FeatureToPoint
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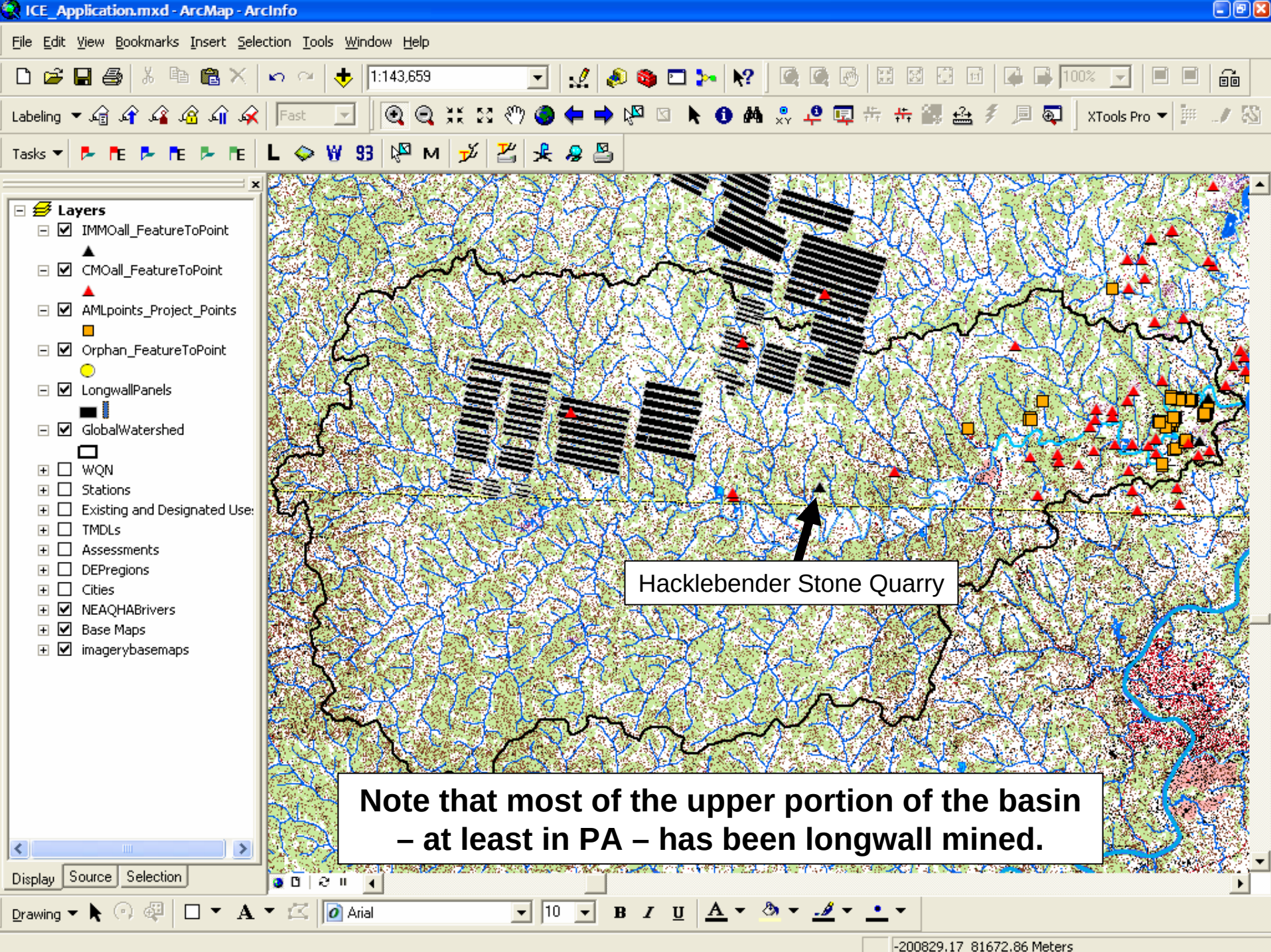
Orphan_FeatureToPoint
LongwallPanels
GlobalWatershed
WQN
Stations
Existing and Designated Use:
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Display
Source
Selection
Drawing
Arial
10
-170093.82 80072.61 Meters
Lots of active mines and discharges, as well as abandoned discharges in PA part of the lower watershed – many with reclamation projects in place.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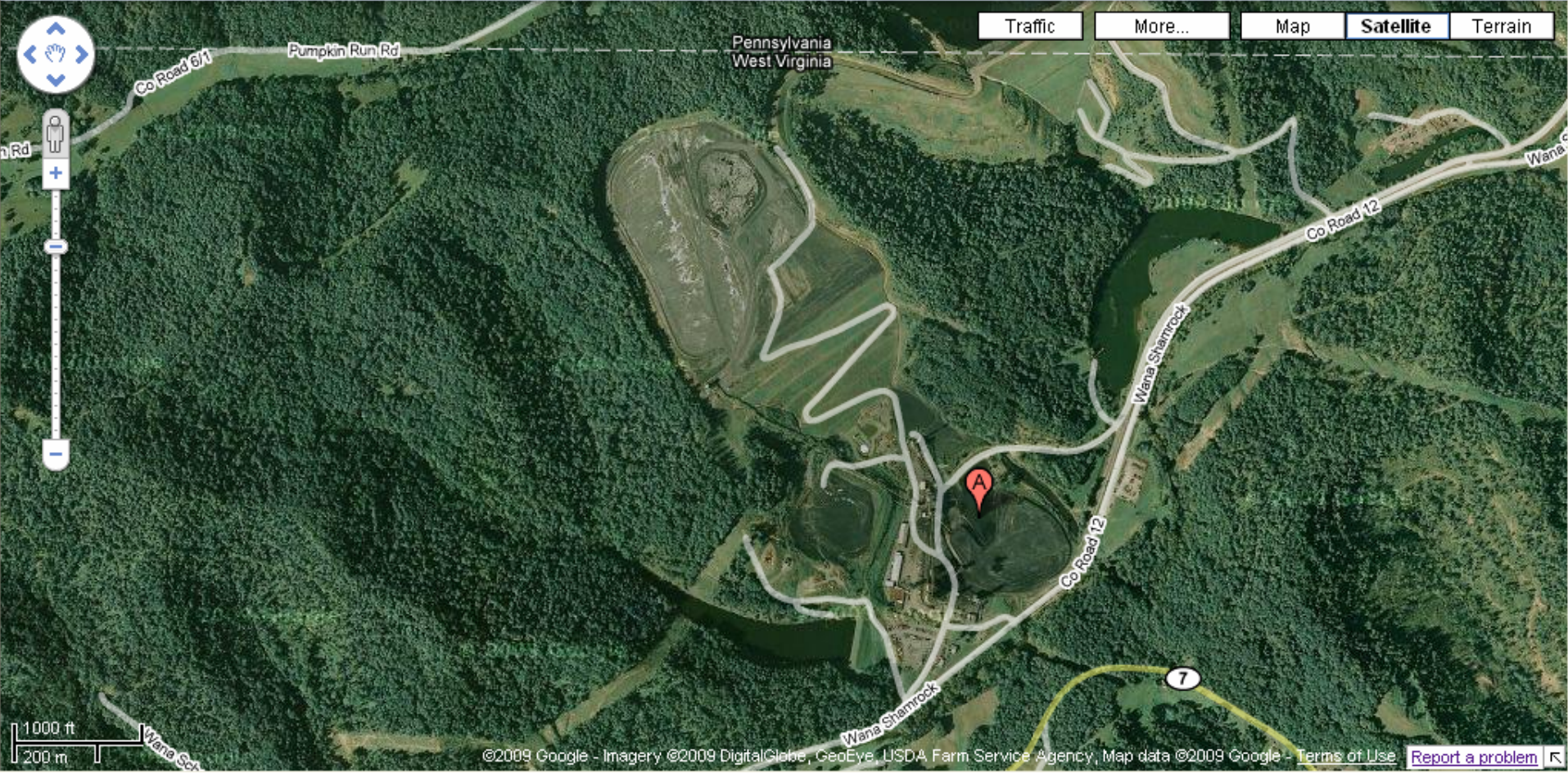
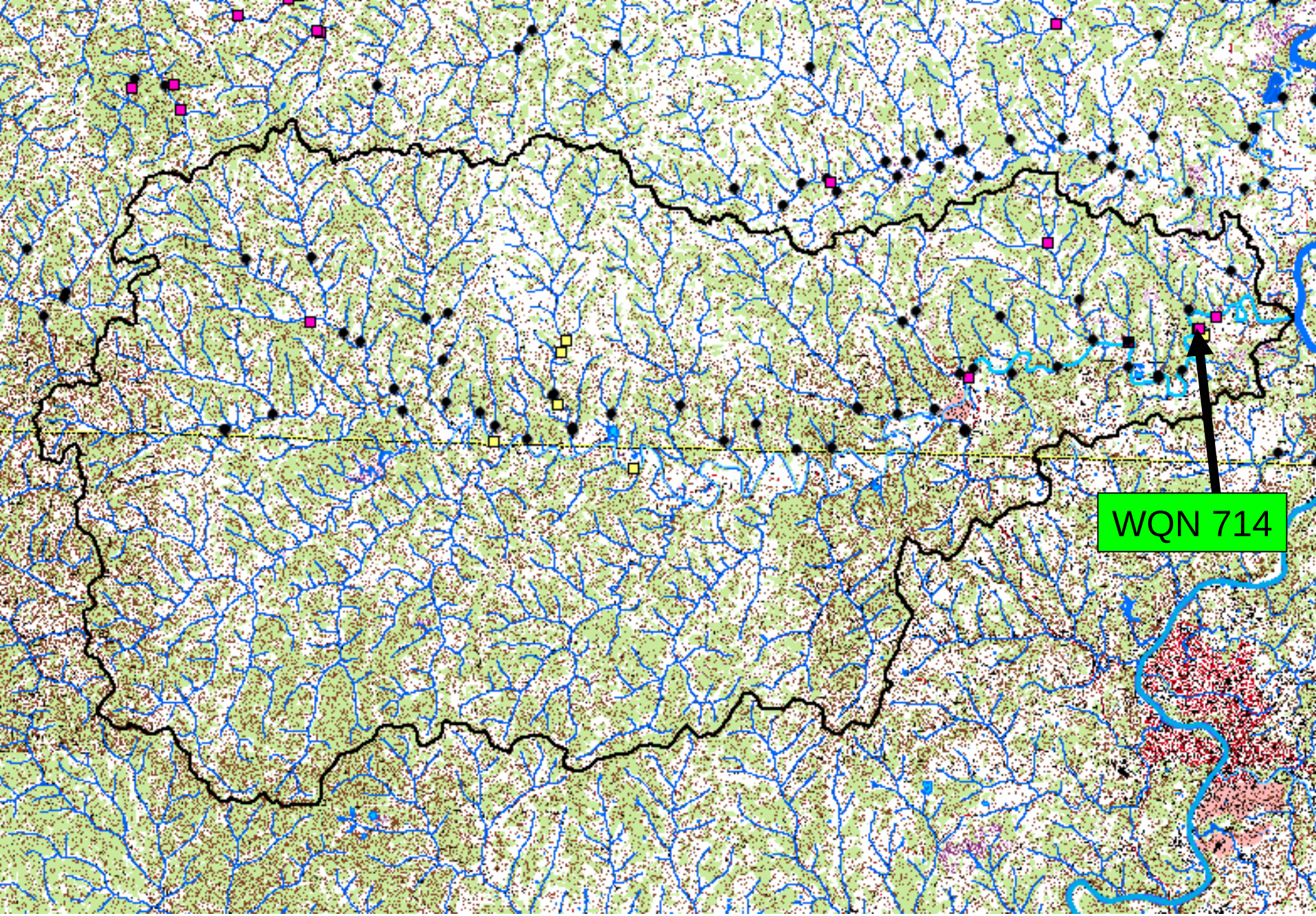
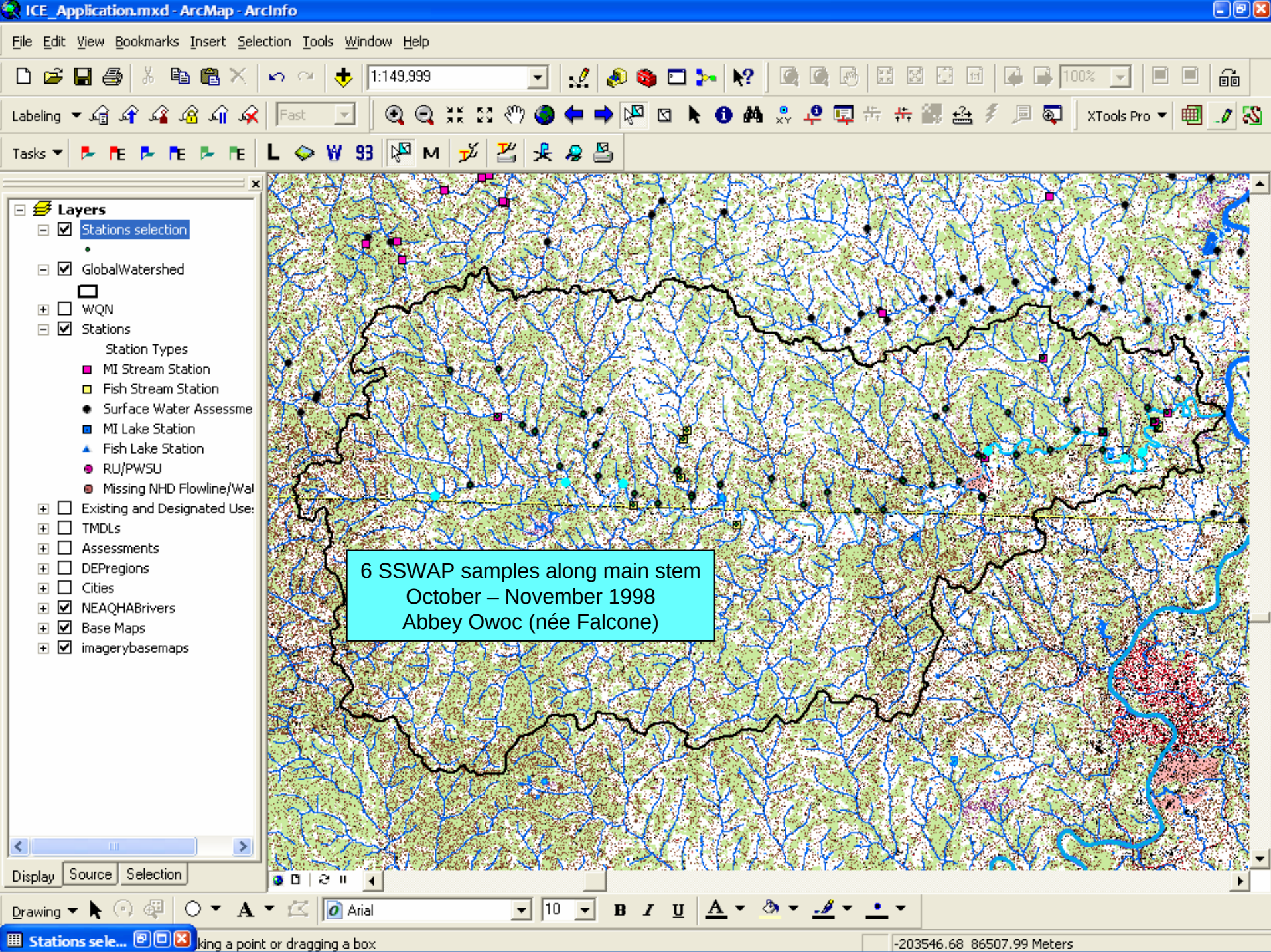
Stations
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Display
Source
Selection
Hacklebender Stone Quarry
Note that most of the upper portion of the basin – at least in PA – has been longwall mined.
Drawing
Arial
10
-200829.17 81672.86 Meters



Blacksville 2 Mine

Blacksville 2 Mine


WQN 714
PADEP sampling stations
SSWAP
RBP bugs
Fish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Station Types
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Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use:
TMDLs
Assessments
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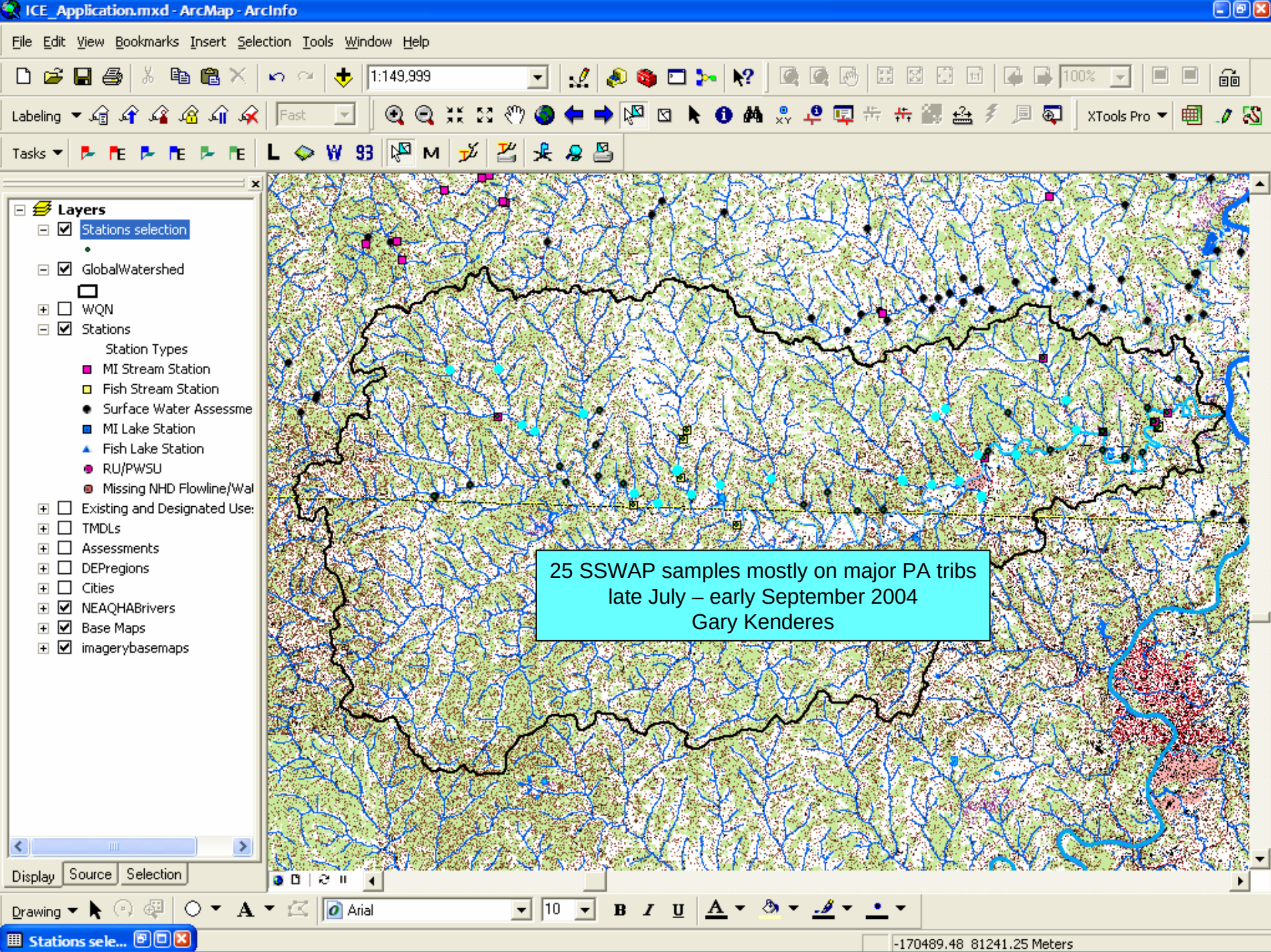
NEAQHABrivers
Base Maps
imagerybasemaps
6 SSWAP samples along main stem
October – November 1998
Abbey Owoc (née Falcone)
Display
Source
Selection
Drawing
Arial
10
Stations sele...
king a point or dragging a box
-203546.68 86507.99 Meters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Fast
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Stations selection
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MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
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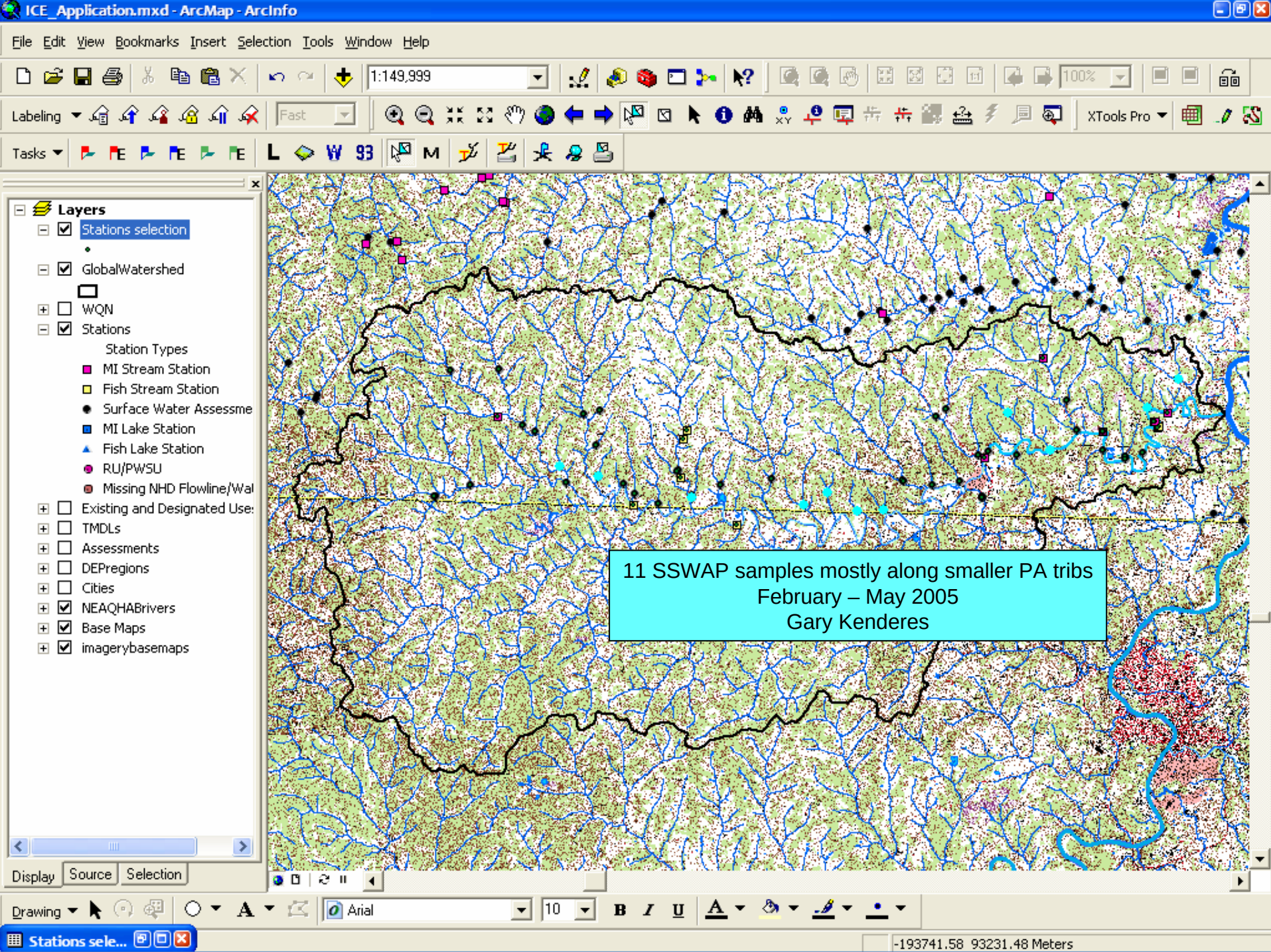
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Display
Source
Selection
25 SSWAP samples mostly on major PA tribs
late July – early September 2004
Gary Kenderes
Drawing
Arial
10
Stations sele...
-170489.48 81241.25 Meters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Station Types
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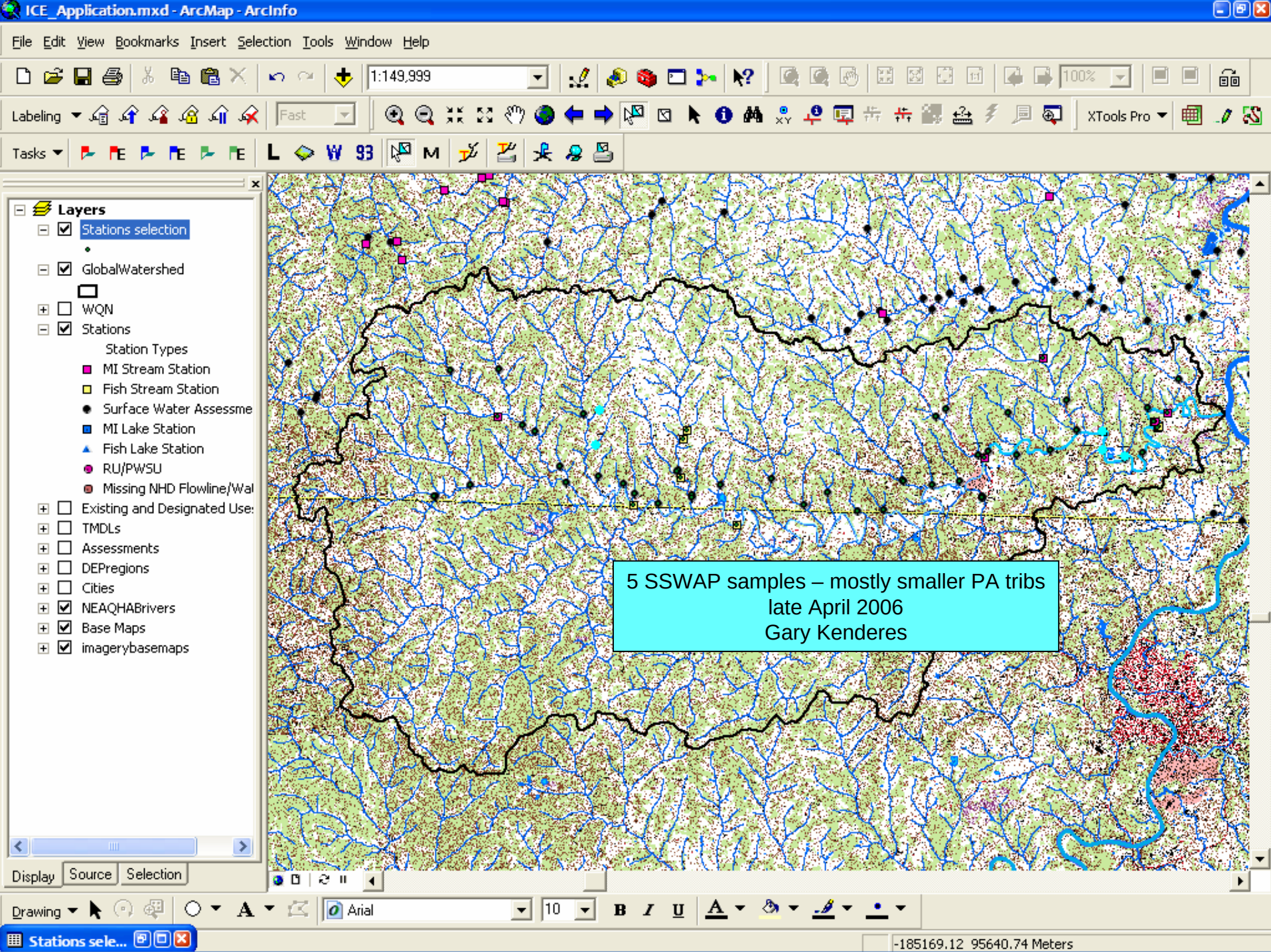
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Display
Source
Selection
11 SSWAP samples mostly along smaller PA tribs
February – May 2005
Gary Kenderes
Drawing
Arial
10
Stations sele...
-193741.58 93231.48 Meters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Stations selection
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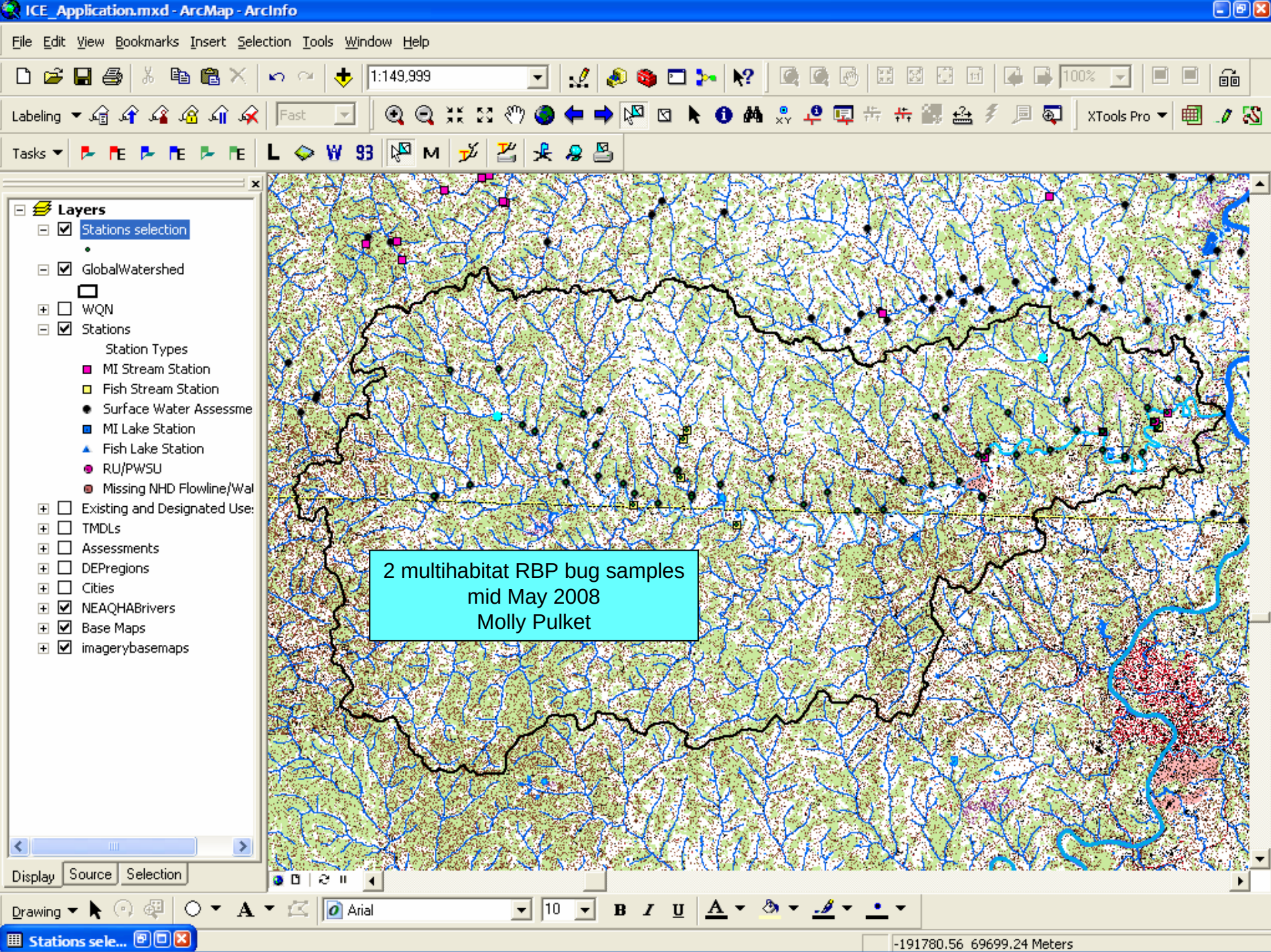
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
5 SSWAP samples – mostly smaller PA tribs
late April 2006
Gary Kenderes
Display
Source
Selection
Drawing
Arial
10
Stations sele...
-185169.12 95640.74 Meters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Stations selection
GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use:
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
2 multihabitat RBP bug samples
mid May 2008
Molly Pulket
Display
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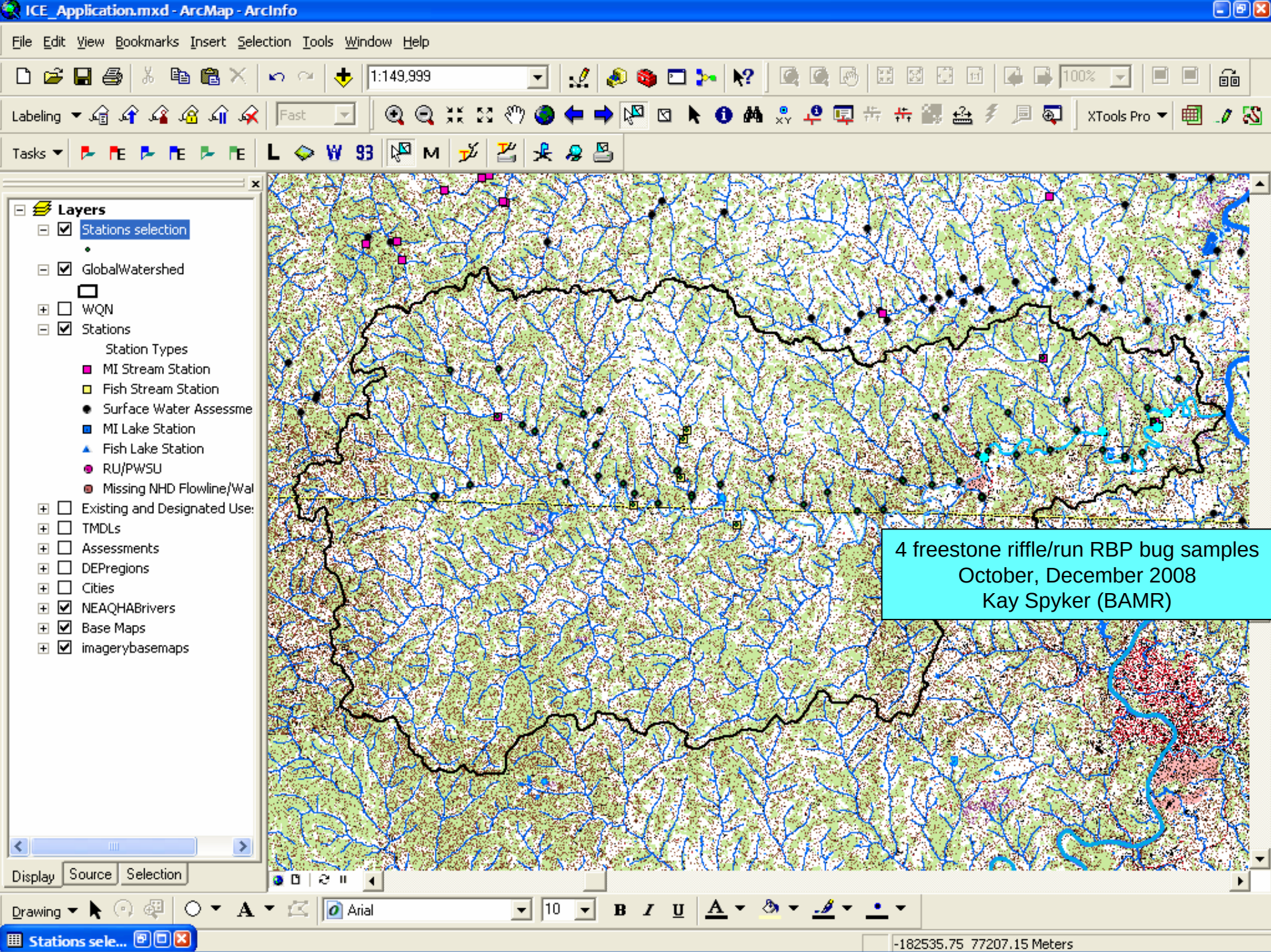
Selection
Drawing
Arial
10
Stations sele...
-191780.56 69699.24 Meters


ICE_Application.mxd - ArcMap - ArcInfo
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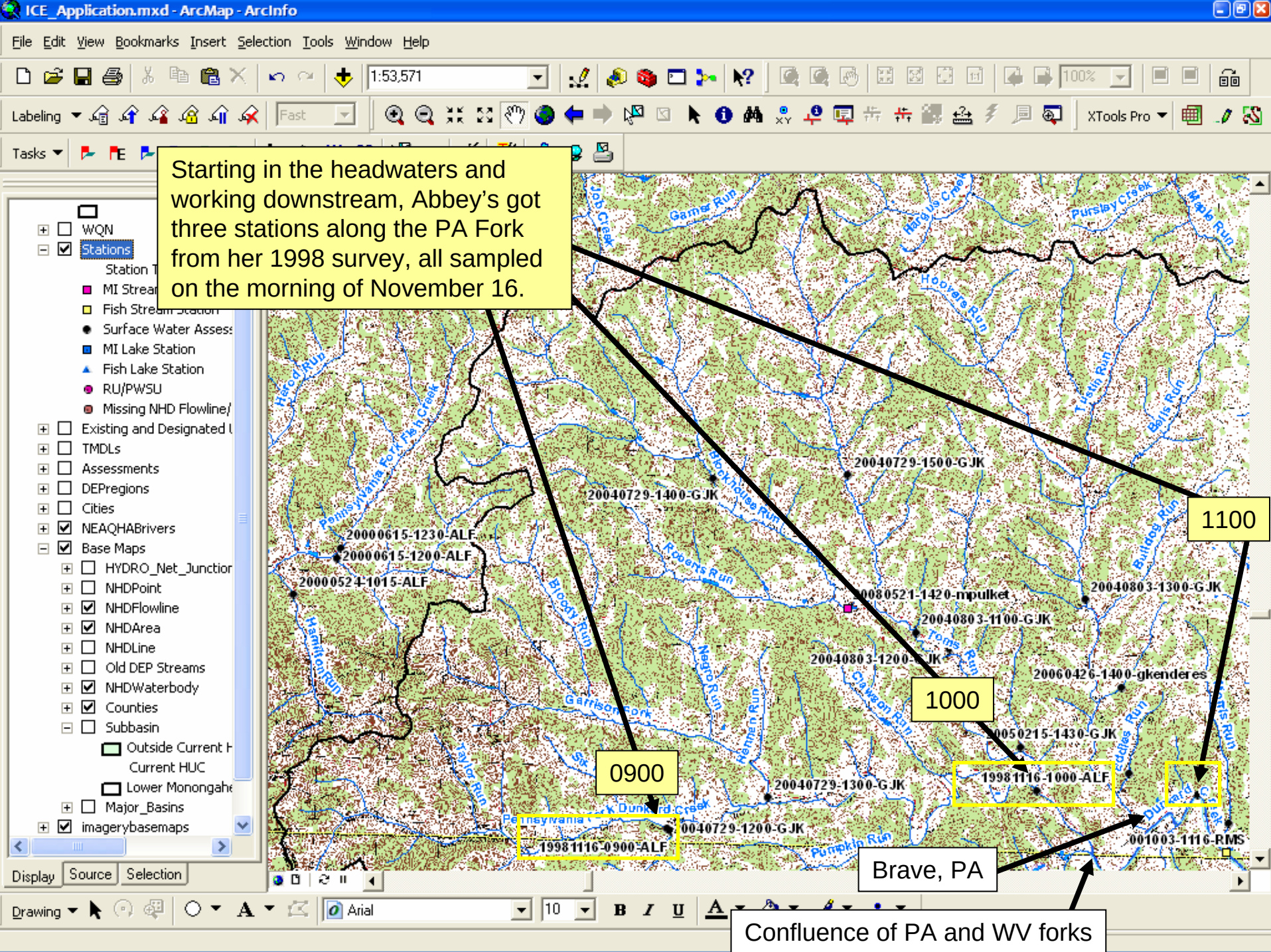
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Display
Source
Selection
4 freestone riffle/run RBP bug samples
October, December 2008
Kay Spyker (BAMR)
Drawing
Arial
10
Stations sele...
-182535.75 77207.15 Meters


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Starting in the headwaters and working downstream, Abbey's got three stations along the PA Fork from her 1998 survey, all sampled on the morning of November 16.
WQN
Stations
Surface Water Assess
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
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Subbasin
Outside Current H
Current HUC
Lower Monongahe
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imagerybasemaps
Display Source Selection
Drawing
Arial
10
20040729-1500-GJK
20040729-1400-GJK
20000615-1230-ALF
20000615-1200-ALF
20000524-1015-ALF
20080521-1420-mpulket
20040803-1300-GJK
20040803-1100-GJK
20040803-1200-GJK
20060426-1400-gkenderes
20050215-1430-GJK
19981116-1000-ALF
20040729-1300-GJK
20040729-1200-GJK
19981116-0900-ALF
001003-1116-RMS
1100
1000
0900
Brave, PA
Confluence of PA and WV forks

Station ID 19981116-0900-ALF **Stream Name** Pennsylvania Fork Dunkard Creek (01544705)
Secondary Station ID
Survey ID 43274 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7230467 **Longitude** -80.3494003
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
HERO--WEST PAST JOLLYTOWN

Biology / Physical Habitat Comments
1 MUDPUPPY (BABY)
DARTERS
2 TYPES OF HEPTAGENIIDAE

Land Use Comments
HARDLY DEVELOPED-FORESTED AND PASTURE

Impairment Status Comments
NOT IMPAIRED

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Abundant	25-100	3	SC
Ephemerellidae	Present	3-9	2	CG
Caenidae	Rare	<3	7	CG
Ephemeridae	Rare	<3	4	CG
Gomphidae	Rare	<3	4	PR
Perlidae	Abundant	25-100	3	PR
Chloroperlidae	Present	3-9	0	PR
Sialidae	Common	10-24	6	PR
Nigronia	Common	10-24	2	PR
Philopotamidae	Common	10-24	3	FC
Hydropsychidae	Common	10-24	5	FC
Helicopsychidae	Abundant	25-100	3	SC
Psephenidae	Present	3-9	4	SC
Elmidae	Common	10-24	5	CG
Chironomidae(other)	Common	10-24	6	
Athericidae	Rare	<3	2	PR
Empididae	Present	3-9	6	PR
Tabanidae	Rare	<3	6	PI
Ancylidae	Present	3-9	7	SC
Sphaeriidae	Present	3-9	8	FC
Cambaridae	Common	10-24	6	CG

Pretty good lookin' SSWAP sample, if you ask me.

No winter stoneflies (November sample) though.

SSWAP IBI = 79.7

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

File Edit View Tools Window Help Adobe PDF

Type a question for help

95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	16	9. Condition of Banks	13
2. Epifaunal Substrate	14	6. Sediment Deposition	14	10. Bank Vegetation	14
3. Embeddedness	16	7. Frequency of Riffles	13	11. Grazing/Disruptive Pressure	12
4. Velocity/Depth Regime	15	8. Channel Flow Status	14	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 60 Riparian Score (9. + 10. + 12.) = 43 Total Score = 173

Field Measurements

Lab samples

Temperature (°C)	5.4	Dissolved Oxygen (mg/L)	6.6	Flow (CFS)	
pH	7.4	Alkalinity (mg/L as CaCO3)		Conductivity	283

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040729-1200-GJK)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (Year)

Condition of banks and disruptive pressure scored low suboptimal, otherwise, habitat mostly low end of optimal or high suboptimal.

pH okay. Conductivity not real high, but seems elevated for such a small stream – maybe attributable to Waynesburg Hill soils?

Station ID 19981116-1000-ALF **Stream Name** Pennsylvania Fork Dunkard Creek (01544705)
Secondary Station ID
Survey ID 43275 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7302376 **Longitude** -80.2809962
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
US SHAMROCK, US ~1.2 MILES WV FORK

Biology / Physical Habitat Comments
1 DARTER
NO CRAYFISH

Land Use Comments
HARDLY DEVELOPED

Impairment Status Comments
NOT IMPAIRED

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Abundant	25-100	3	CG
Heptageniidae	Abundant	25-100	3	SC
Perlidae	Common	10-24	3	PR
Nigronia	Present	3-9	2	PR
Philopotamidae	Abundant	25-100	3	FC
Hydropsychidae	Abundant	25-100	5	FC
Limnephilidae	Present	3-9	4	SH
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Present	3-9	6	
Tabanidae	Rare	<3	6	PI
Tipulidae	Common	10-24	4	SH

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	3.56	86.9
Shannon Diversitiy	2.02	76.7
	SSWAP IBI	53.2

Isonychidae, Philopotamidae and Hydropsychidae more abundant in this sample compared to 0900, further upstream. No Ephemerellids or Chloroperlids here. Perlids less abundant. No Elmids here. No Atherix; no crayfish.

Also, no winter stoneflies.

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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Type a question for help

95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	15	9. Condition of Banks	14
2. Epifaunal Substrate	11	6. Sediment Deposition	14	10. Bank Vegetation	15
3. Embeddedness	12	7. Frequency of Riffles	13	11. Grazing/Disruptive Pressure	13
4. Velocity/Depth Regime	14	8. Channel Flow Status	14	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 52 Riparian Score (9. + 10. + 12.) = 44 Total Score = 165

Field Measurements

Lab samples

Temperature (°C)	7	Dissolved Oxygen (mg/L)	6.74	Flow (CFS)	
pH	7.5	Alkalinity (mg/L as CaCO3)		Conductivity	619

Use Assessment Status for Stream Reach

Aquatic Life

Fish Consumption Impaired (20020111-1265-FIT)
Source Unknown - Mercury

Potable Water Supply

Recreation

Condition of banks and disruptive pressure still scored low suboptimal, along with epifaunal substrate and embeddedness at this site – scores pretty similar otherwise.

pH about the same. Temperature increase by 1.6 °C. Conductivity 619 umhos/cm compared to 283 at 0900 site.

Station ID 19981116-1100-ALF **Stream Name** Dunkard Creek (01213619)
Secondary Station ID
Survey ID 43276 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7301666 **Longitude** -80.2509648
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DS BRAVE, BELOW SECOND DAM

Biology / Physical Habitat Comments
1 RAINBOW DARTER
NO CRAYFISH
ASIATIC CLAM-CORBICULA-VA-EVERYWHERE

Land Use Comments
PLANT ON RIGHT BANK OF CREEK

Impairment Status Comments
HIGH CONDUCTIVITY

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Common	10-24	3	SC
Coenagrionidae	Rare	<3	8	PR
Taeniopterygidae	Rare	<3	2	SH
Perlodidae	Present	3-9	2	PR
Nigronia	Present	3-9	2	PR
Philopotamidae	Abundant	25-100	3	FC
Hydropsychidae	Abundant	25-100	5	FC
Tipulidae	Present	3-9	4	SH
Simuliidae	Rare	<3	6	FC
Physidae	Present	3-9	8	SC
Ancylidae	Rare	<3	7	SC
Sphaeriidae	Present	3-9	8	FC
Corbiculidae	Very Abundant	>100	4	FC
Oligochaeta	Rare	<3	10	CG

Kinda similar to 1000 sample, except for the very abundant Corbuicula here and other snails and freshwater clams. Isonychidae and Heptageniidae less abundant here.

Winter stonefly or -flies.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	15	68.2
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	4.03	80.6
Shannon Diversitiy	1.64	62.2

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	9	5. Channel Alteration	13	9. Condition of Banks	15
2. Epifaunal Substrate	9	6. Sediment Deposition	14	10. Bank Vegetation	14
3. Embeddedness	10	7. Frequency of Riffles	13	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	11	8. Channel Flow Status	14	12. Riparian Zone Width	14

Instream Score (1. + 2. + 3. + 6.) = 42 Riparian Score (9. + 10. + 12.) = 43 Total Score = 151

Field Measurements

Lab samples

Temperature (°C)	9.3	Dissolved Oxygen (mg/L)	6.73	Flow (CFS)	
pH	7.86	Alkalinity (mg/L as CaCO3)		Conductivity	1519

Use Assessment Status for Stream Reach

Aquatic Life Attaining (981116-1100-ALF)

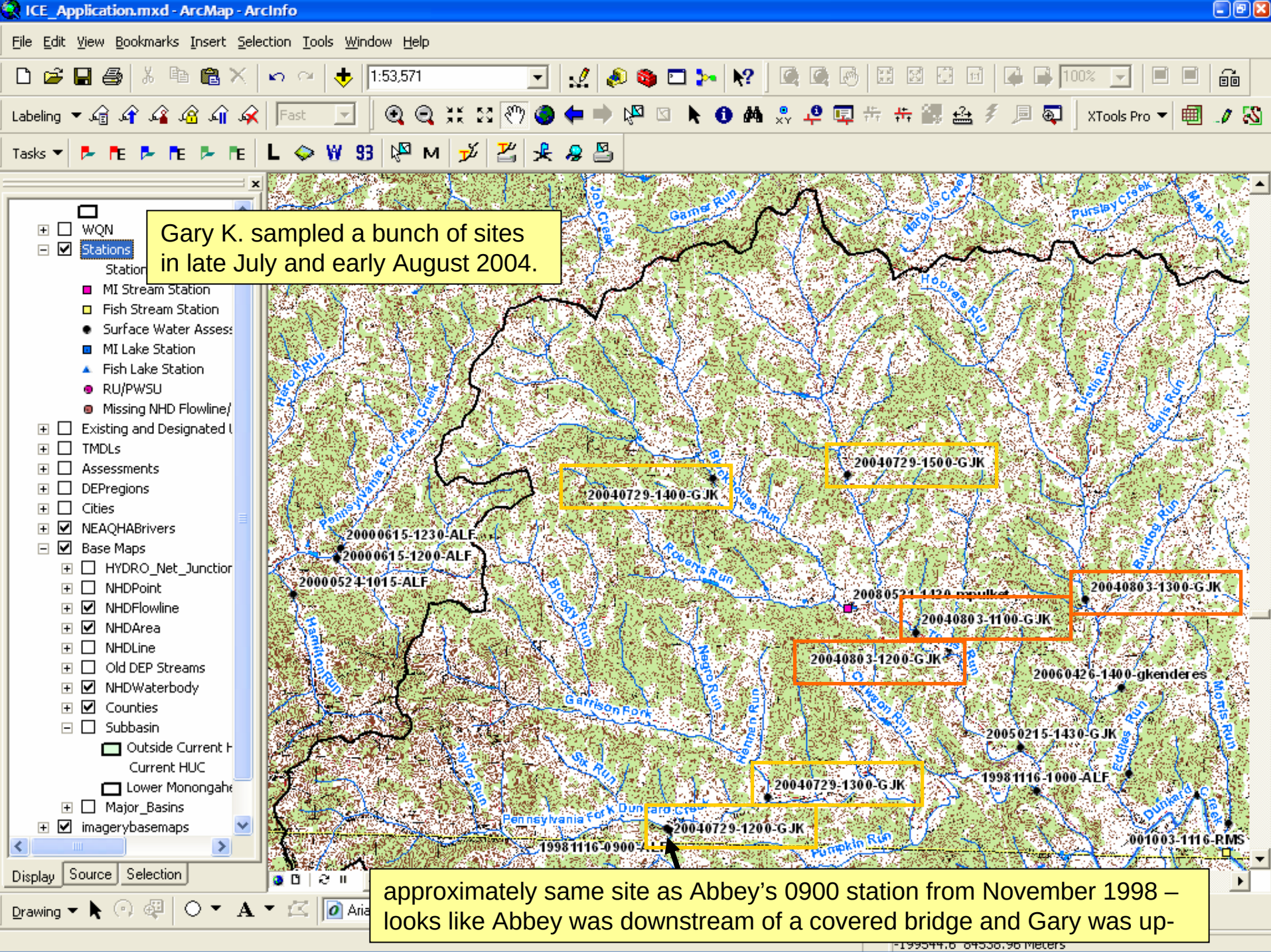
Fish Consumption Impaired (20020111-1265-FIT)
Source Unknown - Mercury

Potable Water Supply

Recreation

First four habitat parameters scored low; others mostly low to mid suboptimal.

pH up just a bit. Temperature increase by another 2.3 °C. Conductivity **1519** compared to 619 and 283 progressively upstream.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Fish Stream Station
Surface Water Assess
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
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NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
imagerybasemaps
Display
Source
Selection
Drawing
Gary K. sampled a bunch of sites in late July and early August 2004.
20040729-1500-GJK
20040729-1400-GJK
20000615-1230-ALF
20000615-1200-ALF
20000524-1015-ALF
20040803-1300-GJK
20040803-1100-GJK
20040803-1200-GJK
20060426-1400-gkenderes
20050215-1430-GJK
19981116-1000-ALF
20040729-1300-GJK
20040729-1200-GJK
19981116-0900-
001003-1116-RMS
approximately same site as Abbey's 0900 station from November 1998 – looks like Abbey was downstream of a covered bridge and Gary was up-

Station ID 20040729-1200-GJK **Stream Name** Pennsylvania Fork Dunkard Creek (01544705)
Secondary Station ID
Survey ID 53875 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7233489 **Longitude** -80.3499885
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad -Wadestown
From Hero PA take LR 30082 to bridge crossing just out of town - Sampled upstream 40 feet from bridge

Biology / Physical Habitat Comments
(1) darter collected
Hexatoma collected
Good taxa diversity

Land Use Comments
Other; Roads follow stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Common	10-24	3	SC
Leptophlebiidae	Present	3-9	4	CG
Perlidae	Present	3-9	3	PR
Nigronia	Present	3-9	2	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC
Elmidae	Present	3-9	5	CG
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Cambaridae	Present	3-9	6	CG

Abbey sampled in mid November of 1998, this was sampled by Gary in late July 2004. I think this looks pretty decent for a late July SSWAP sample. Overall abundance looks decreased compared to Abbey's sample – as does overall diversity – but that's to be expected in midsummer.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	13	59.1
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	2	14.3
Hilsenhoff Biotic Index	3.78	83.9
Shannon Diversitiy	2.39	90.7
	SSWAP IBI	58.7

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	15	9. Condition of Banks	17
2. Epifaunal Substrate	16	6. Sediment Deposition	16	10. Bank Vegetation	17
3. Embeddedness	14	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	16	8. Channel Flow Status	16	12. Riparian Zone Width	13

Instream Score (1. + 2. + 3. + 6.) = 62 Riparian Score (9. + 10. + 12.) = 47 Total Score = 185

Field Measurements

Lab samples

Temperature (°C)	20.6	Dissolved Oxygen (mg/L)	8.6	Flow (CFS)	
pH	8.1	Alkalinity (mg/L as CaCO3)		Conductivity	172

Use Assessment Status for Stream R

Aquatic Life Attaining (20040729-1

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Either Gary was more forgiving on habitat parameters 9 – 11 than Abbey, or the banks/riparia had improved substantially in the 6 years between their surveys or the bridge changes conditions that much.

pH a bit higher than at Abbey's visit. Temperature way higher than Abbey's visit (seasonal (+ time of day)). Conductivity 172 compared to 283 at Abbey's visit.

Station ID 20040729-1300-GJK **Stream Name** Garrison Fork (01192503)
Secondary Station ID
Survey ID 53877 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.728162 **Longitude** -80.3313777
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad -Wadestown
From Hero PA take route 3006 east to bridge crossing Garrison Fork just before Jollytown Road - Sampled downstream of bridge 40 feet

Biology / Physical Habitat Comments
(1) darter collected

Land Use Comments
Other; Roads follow stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Present	3-9	3	SC
Nigronia	Present	3-9	2	PR
Philopotamidae	Common	10-24	3	FC
Hydropsychidae	Abundant	25-100	5	FC
Psephenidae	Present	3-9	4	SC
Elmidae	Present	3-9	5	CG
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Cambaridae	Present	3-9	6	CG

Not that different from 20040729-1200-GJK; sampled 1 hour apart. No stoneflies (Perlids) here; no Leptophlebiids here; no Baetids here.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	10	45.5
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	2	14.3
Hilsenhoff Biotic Index	3.98	81.2
Shannon Diversitiy	1.92	72.8
	SSWAP IBI	48.2

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	15	9. Condition of Banks	17
2. Epifaunal Substrate	16	6. Sediment Deposition	14	10. Bank Vegetation	17
3. Embeddedness	13	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	15	8. Channel Flow Status	16	12. Riparian Zone Width	13

Instream Score (1. + 2. + 3. + 6.) = 59 Riparian Score (9. + 10. + 12.) = 47 Total Score = 183

Field Measurements

Lab samples

Temperature (°C)	20.4	Dissolved Oxygen (mg/L)	8.3	Flow (CFS)	
pH	8.1	Alkalinity (mg/L as CaCO3)		Conductivity	215

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040729-1300-GJK)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Habitat scored almost exactly the same as 1200 sample.

Chem very similar to 1200 sample; cond = 215 compared to 172.

Station ID 20040729-1400-GJK **Stream Name** Blockhouse Run (01169827)
Secondary Station ID
Survey ID 53878 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7741389 **Longitude** -80.3432275
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Holbrook
From Pine Bank PA take Blockhouse Road pass James Road and sampled stream stretch located in game lands across road from gas- oil well

Biology / Physical Habitat Comments
Collected (3) darters and (1) Blacknose Dace
Observed a school of Blacknose Dace (30)
Heptageniidae abundant

Land Use Comments
Other; Roads follow stream

Impairment Status Comments
Not Impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Abundant	25-100	3	SC
Gomphidae	Present	3-9	4	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Common	10-24	4	SC
Elmidae	Common	10-24	5	CG
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Cambaridae	Common	10-24	6	CG

Pretty limited taxa list, but this was late July.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	2	18.2
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	3.99	81.1
Shannon Diversitiy	1.98	75.2
	SSWAP IBI	44.5

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	13	5. Channel Alteration	16	9. Condition of Banks	13
2. Epifaunal Substrate	15	6. Sediment Deposition	14	10. Bank Vegetation	14
3. Embeddedness	12	7. Frequency of Riffles	13	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 54 Riparian Score (9. + 10. + 12.) = 42 Total Score = 170

Field Measurements

Lab samples

Temperature (°C)	23	Dissolved Oxygen (mg/L)	10	Flow (CFS)	
pH	8.2	Alkalinity (mg/L as CaCO3)		Conductivity	225

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040729-1400-GJK)

Fish Consumption

Potable Water Supply

Recreation

Habitat scored a bit lower on most parameters, especially bank parameters (9 and 10).

Chem comprable to 1300 sample.

TMDL Information (if any)

Station ID 20040729-1500-GJK **Stream Name** Toms Run (01189651)
Secondary Station ID
Survey ID 53880 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7751598 **Longitude** -80.3180316
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Holbrook
South from Buzz PA on route 3009 go .75 miles to abandon house and barn (shed) - Sampled straight in from road across from house downtream 70 feet from old bridge.

Biology / Physical Habitat Comments
Psephenidae abundant

Land Use Comments
Other; Roads follow stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Common	10-24	3	SC
Perlidae	Present	3-9	3	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Abundant	25-100	4	SC
Elmidae	Common	10-24	5	CG
Chironomidae(other)	Present	3-9	6	
Tipulidae	Present	3-9	4	SH
Cambaridae	Present	3-9	6	CG

Fairly similar to 1400 sample;
Psphenus more abundant here;
Heptageniids less abundant here;
Perlids present here.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	10	45.5
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	0	0.0
Hilsenhoff Biotic Index	4.08	80.0
Shannon Diversitiy	2.02	76.5
	SSWAP IBI	47.6

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	15	9. Condition of Banks	13
2. Epifaunal Substrate	15	6. Sediment Deposition	15	10. Bank Vegetation	13
3. Embeddedness	12	7. Frequency of Riffles	13	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	15	8. Channel Flow Status	15	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 57 Riparian Score (9. + 10. + 12.) = 42 Total Score = 173

Field Measurements

Lab samples

Temperature (°C)	22.9	Dissolved Oxygen (mg/L)	9.2	Flow (CFS)	
pH	8.3	Alkalinity (mg/L as CaCO3)		Conductivity	304

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040729-1500-GJK)

Fish Consumption

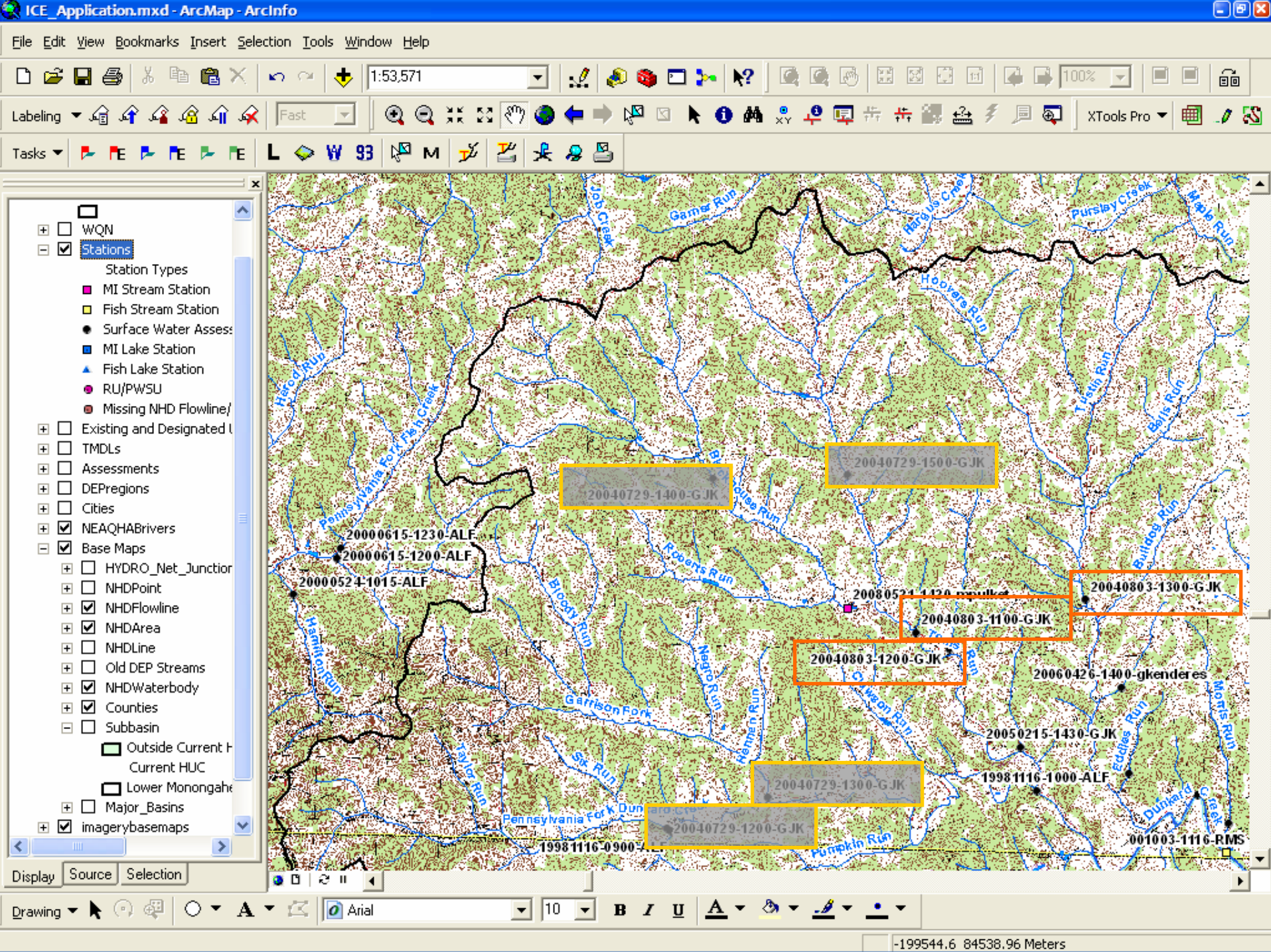
Potable Water Supply

Recreation

TMDL Information (if any)

Habitat scored similar to 1400 sample; fish cover a bit better here.

Conductivity 304.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Hargus Creek
Pursley Creek
Maple Run
Hoovers Run
Harold Run
Pennsylvania Fork Elm Creek
Tustin Run
Bells Run
Roberts Run
Bloody Run
Bulldog Run
Hamilton Run
Negro Run
Gattison Fork
Henren Run
Owen Run
Morris Run
Eddies Run
Six Run
Taylor Run
Pennsylvania Fork Dun
Dunkard Creek
Pumpkin Run
20040729-1500-GJK
20040729-1400-GJK
20000615-1230-ALF
20000615-1200-ALF
20000524-1015-ALF
20040803-1300-GJK
20040803-1100-GJK
20040803-1200-GJK
20060426-1400-gkenderes
20050215-1430-GJK
19981116-1000-ALF
20040729-1300-GJK
20040729-1200-GJK
19981116-0900-
001003-1116-RMS
-199544.6 84538.96 Meters

Station ID 20040803-1100-GJK **Stream Name** Toms Run (01189651)
Secondary Station ID
Survey ID 53883 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7526596 **Longitude** -80.3043890
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Holbrook
From Pine Bank PA take route 3009 south .5 miles where stream cuts close to road - Sampled straight in from road upstream of large cementary

Biology / Physical Habitat Comments
Collected (2) darters
Mussel (1) (old shell) Floater
Algae and periphyton on large rocks
Isonychiidae abundant

Land Use Comments
Other; Roads follow streams
Note' Pine Bank Mine Portal active

Impairment Status Comments
Not Impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Abundant	25-100	3	CG
Heptageniidae	Common	10-24	3	SC
Cordulegastridae	Rare	<3	3	PR
Nigronia	Rare	<3	2	PR
Philopotamidae	Rare	<3	3	FC
Hydropsychidae	Present	3-9	5	FC
Elmidae	Present	3-9	5	CG
Chironomidae(other)	Present	3-9	6	
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Cambaridae	Rare	<3	6	CG

Pretty similar to the last three samples from four days earlier; Isoynichia more abundant here; caddisflies a bit less abundant here.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	2	14.3
Hilsenhoff Biotic Index	3.43	88.7
Shannon Diversitiy	1.77	66.9
	SSWAP IBI	49.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	16	9. Condition of Banks	13
2. Epifaunal Substrate	13	6. Sediment Deposition	15	10. Bank Vegetation	13
3. Embeddedness	13	7. Frequency of Riffles	12	11. Grazing/Disruptive Pressure	17
4. Velocity/Depth Regime	16	8. Channel Flow Status	15	12. Riparian Zone Width	17

Instream Score (1. + 2. + 3. + 6.) = 57 Riparian Score (9. + 10. + 12.) = 43 Total Score = 176

Field Measurements

Lab samples

Temperature (°C)	24	Dissolved Oxygen (mg/L)	7.9	Flow (CFS)	
pH	7.5	Alkalinity (mg/L as CaCO3)		Conductivity	265

Use Assessment Status for Stream Reach

Aquatic Life Attaining (4933)

Fish Consumption

Potable Water Supply

Recreation

Habitat fairly similar to two last stations from four days earlier.

Conductivity 265.

TMDL Information (if any)

Station ID 20040803-1200-GJK **Stream Name** Toms Run (Unamed Trib 99419234 To)
Secondary Station ID
Survey ID 53885 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7504218 **Longitude** -80.2979088
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Holbrook
From Pine Bank PA take 3009 east 1 mile to Pine Bank Church - Cross bridge and pulloff at bridge - Sampled 30 feet upstream of bridge

Biology / Physical Habitat Comments
Collected (6) darters
Heptageniidae present

Land Use Comments
Other; Roads follow stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Present	3-9	3	SC
Leptophlebiidae	Common	10-24	4	CG
Leuctridae	Present	3-9	0	SH
Sialidae	Rare	<3	6	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Common	10-24	4	SC
Elmidae	Present	3-9	5	CG
Chironomidae(other)	Present	3-9	6	
Athericidae	Present	3-9	2	PR
Turbellaria	Rare	<3	9	
Cambaridae	Present	3-9	6	CG

No Isonychia here. Sorta similar to first sample from four days earlier; no Perlids here; Leuctrids here. UNT.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	12	54.5
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	4.32	76.6
Shannon Diversitiy	2.23	84.5
	SSWAP IBI	54.3

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	14	9. Condition of Banks	15
2. Epifaunal Substrate	15	6. Sediment Deposition	14	10. Bank Vegetation	17
3. Embeddedness	13	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	17
4. Velocity/Depth Regime	13	8. Channel Flow Status	15	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 58 Riparian Score (9. + 10. + 12.) = 48 Total Score = 180

Field Measurements

Lab samples

Temperature (°C)	22.4	Dissolved Oxygen (mg/L)	10	Flow (CFS)	
pH	7.8	Alkalinity (mg/L as CaCO3)		Conductivity	330

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20040803-1200-GJK)	
Fish Consumption		
Potable Water Supply		
Recreation		

TMDL Information (if any)

Habitat averaging low suboptimal; seems to be some sedimentation/embedding issues here.

Conductivity 330.

Station ID 20040803-1300-GJK **Stream Name** Hoovers Run (01177373)
Secondary Station ID
Survey ID 53889 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7580576 **Longitude** -80.2728543
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Holbrook
From Kuhntown PA take 3013 south 1 mile - Pulloff gravel on right 500 feet upstream from cover bridge - Sampled stream straight in from pulloff

Biology / Physical Habitat Comments
Collected (2) darters and observed school of dace (20)

Land Use Comments
Other; Roads follow stream
Note; Consol portal in headwaters (longwall) active

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Common	10-24	3	SC
Leuctridae	Present	3-9	0	SH
Perlidae	Present	3-9	3	PR
Sialidae	Rare	<3	6	PR
Hydropsychidae	Abundant	25-100	5	FC
Psephenidae	Common	10-24	4	SC
Elmidae	Common	10-24	5	CG
Chironomidae(other)	Present	3-9	6	
Tipulidae	Rare	<3	4	SH
Cambaridae	Rare	<3	6	CG

You can read.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	4.13	79.2
Shannon Diversitiy	1.97	74.8
	SSWAP IBI	52.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	12	5. Channel Alteration	16	9. Condition of Banks	14
2. Epifaunal Substrate	15	6. Sediment Deposition	10	10. Bank Vegetation	14
3. Embeddedness	12	7. Frequency of Riffles	12	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	13	8. Channel Flow Status	14	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 49 Riparian Score (9. + 10. + 12.) = 43 Total Score = 163

Field Measurements

Lab samples

Temperature (°C)	26.7	Dissolved Oxygen (mg/L)	8.9	Flow (CFS)	
pH	7.9	Alkalinity (mg/L as CaCO3)		Conductivity	288

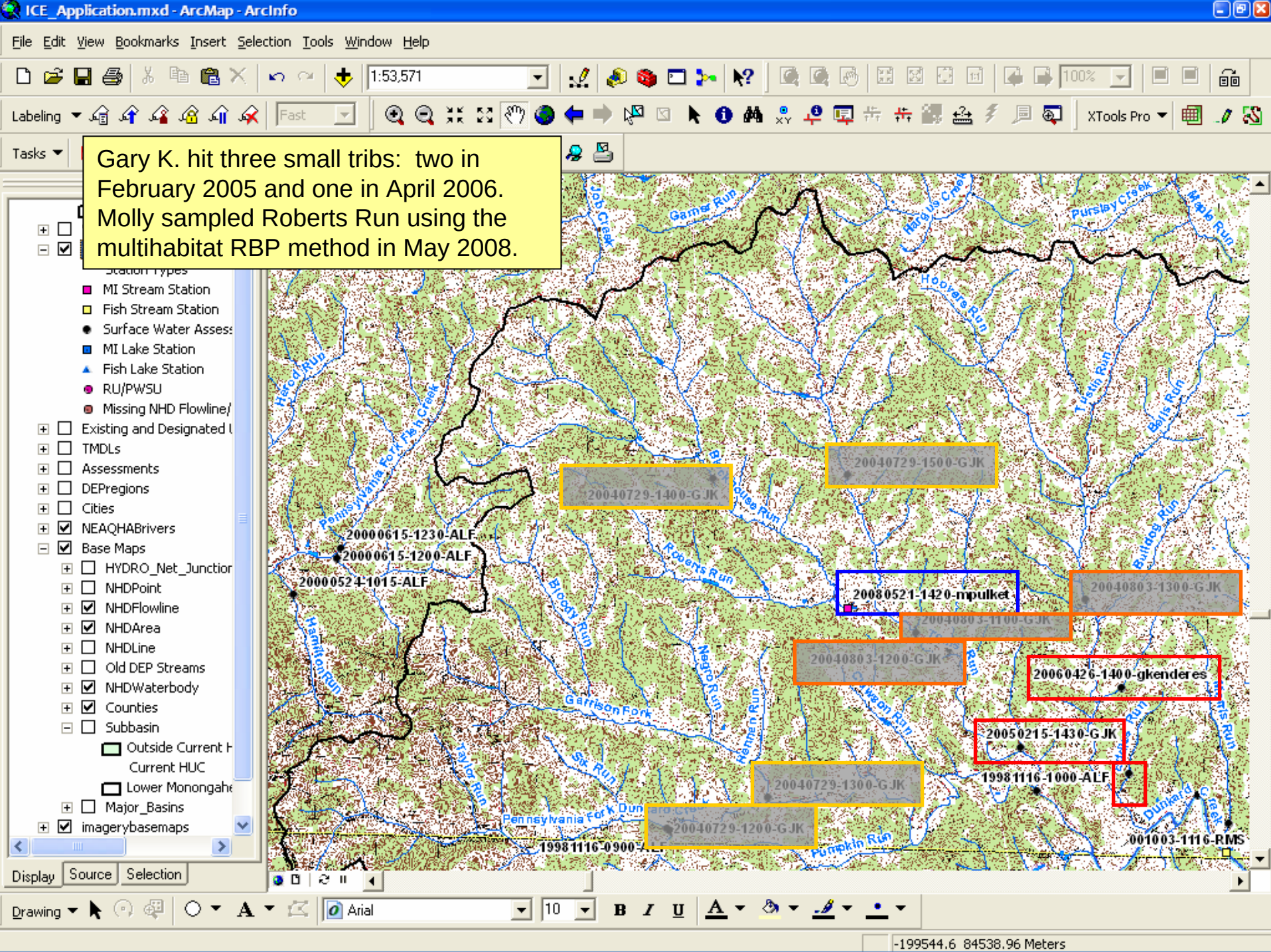
Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20040803-1300-GJK)	
Fish Consumption		
Potable Water Supply		
Recreation		

TMDL Information (if any)

Sedimentation/embedding issues seem worse here; habitat decidedly suboptimal.

Conductivity 288.


ICE_Application.mxd - ArcMap - ArcInfo
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1:53,571
Labeling
Fast
XTools Pro
Tasks
Gary K. hit three small tribs: two in February 2005 and one in April 2006. Molly sampled Roberts Run using the multihabitat RBP method in May 2008.
MI Stream Station
Fish Stream Station
Surface Water Assess
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
imagerybasemaps
Display
Source
Selection
Drawing
Arial
10
20040729-1500-GJK
20040729-1400-GJK
20000615-1230-ALF
20000615-1200-ALF
20000524-1015-ALF
20080521-1420-mpulket
20040803-1300-GJK
20040803-1100-GJK
20040803-1200-GJK
20060426-1400-gkenderes
20050215-1430-GJK
19981116-1000-ALF
20040729-1300-GJK
20040729-1200-GJK
19981116-0900-
001003-1116-RMS
Gamer Run
Hoovers Run
Roberts Run
Bloody Run
Negro Run
Gattison Fork
Six Run
Pumpkin Run
Pennsylvania Fork Dun
Dunkard Creek
-199544.6 84538.96 Meters

Station ID 20050215-1330-GJK **Stream Name** Eddies Run (01173980)
Secondary Station ID
Survey ID 54356 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7330381 **Longitude** -80.2637249
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Wadestown
From Braves P A take State Highway 3013 north 1/2 mile to Eddies Run Road - Drive up this road less than 1/4 mile and pulloff narrow and close to stream - Sampled stream at pipeline crossing area.

Biology / Physical Habitat Comments
Periphyton covering rocks
Epeorus collected
EPT taxa collected
11 total taxa

Land Use Comments
Other - Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Ameletidae	Rare	<3	0	CG
Baetidae	Present	3-9	6	CG
Heptageniidae	Abundant	25-100	3	SC
Capniidae	Present	3-9	3	SH
Perlodidae	Common	10-24	2	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Common	10-24	5	FC
Rhyacophilidae	Present	3-9	1	SC
Uenoidae	Common	10-24	3	SC
Elmidae	Present	3-9	5	CG
Oligochaeta	Rare	<3	10	CG

Pretty decent – fair amount of sensitive taxa; maybe a little low abundance and I'd like to see more caddisflies. Epeorus present.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	7	63.6
Beck's Index (version 3)	6	42.9
Hilsenhoff Biotic Index	3.32	90.2
Shannon Diversitiy	1.97	74.6
	SSWAP IBI	64.3

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	13	9. Condition of Banks	16
2. Epifaunal Substrate	16	6. Sediment Deposition	16	10. Bank Vegetation	16
3. Embeddedness	16	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	10
4. Velocity/Depth Regime	16	8. Channel Flow Status	16	12. Riparian Zone Width	10

Instream Score (1. + 2. + 3. + 6.) = 63 Riparian Score (9. + 10. + 12.) = 42 Total Score = 176

Field Measurements

Lab samples

Temperature (°C)	9.7	Dissolved Oxygen (mg/L)	11.4	Flow (CFS)	
pH	8.4	Alkalinity (mg/L as CaCO3)		Conductivity	215

Use Assessment Status for Stream Reach

Designated Use Existing Use

Aquatic Life Attaining (20050215-1330-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Channel alteration and riparian parameters (11 and 12) scored quite low; others mostly low optimal.

pH 8.4; Conductivity 215.

Station ID 20050215-1430-GJK **Stream Name** Toms Run (Unamed Trib 99419350 To)
Secondary Station ID
Survey ID 54358 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7364210 **Longitude** -80.2842689
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Wadestown
From Shamrock PA take Toms Run Road north to King Hill Road (1.3 miles from Shamrock) - Pulloff at intersection and sampled upstream of bridge crossing 20 feet.

Biology / Physical Habitat Comments
1 blacknose dace and 3 darters collected
Epeorus collected
9 total taxa
Stoneflies 4 taxa collected

Land Use Comments
Other - Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Heptageniidae	Abundant	25-100	3	SC
Ephemerellidae	Rare	<3	2	CG
Peltoperlidae	Rare	<3	2	SH
Capniidae	Rare	<3	3	SH
Perlodidae	Common	10-24	2	PR
Chloroperlidae	Rare	<3	0	PR
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Rare	<3	4	SC
Tipulidae	Present	3-9	4	SH

Pretty decent – fair amount of sensitive taxa; maybe a little low abundance and I'd like to see more caddisflies. Epeorus present. Again.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	6	54.5
Beck's Index (version 3)	6	42.9
Hilsenhoff Biotic Index	2.89	95.9
Shannon Diversitiy	1.44	54.4
	SSWAP IBI	57.7

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

?

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	13	9. Condition of Banks	17
2. Epifaunal Substrate	16	6. Sediment Deposition	15	10. Bank Vegetation	17
3. Embeddedness	15	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	11
4. Velocity/Depth Regime	14	8. Channel Flow Status	16	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 62 Riparian Score (9. + 10. + 12.) = 45 Total Score = 177

Field Measurements

Lab samples

Temperature (°C)	8.5	Dissolved Oxygen (mg/L)	11.3	Flow (CFS)	
pH	8.2	Alkalinity (mg/L as CaCO3)		Conductivity	104

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20050215-1430-gkenderes)	
Fish Consumption		
Potable Water Supply		
Recreation		

TMDL Information

Riparian parameters scored low suboptimal; most others low suboptimal; channel alteration 13.

pH 8.2; Conductivity 104.

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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95% Close Setup

Station ID 20060426-1400-gkenderes **Stream Name** Hoovers Run (Unamed Trib 99419248 To)
Secondary Station ID
Survey ID 55577 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7455274 **Longitude** -80.2655988
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad -Wadestown
From Kuhntown PA take State HWY 3013 south to Wise Run Road on left - Travel up road to powerline crossing - Pull off and walk down to stream straight along powerline and sampled

Biology / Physical Habitat Comments
6 taxa collected
Dominant taxa Heptageniidae (abundant)
Nemouridae common and Perlodidae present and Rhyacophilidae common and Ameletidae present
Epeorus collected.

Land Use Comments
Other: Road follows stream (gravel) and powerline crossing
Mostly forested

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Ameletidae	Present	3-9	0	CG
Baetidae	Present	3-9	6	CG
Heptageniidae	Abundant	25-100	3	SC
Nemouridae	Common	10-24	2	SH
Perlodidae	Present	3-9	2	PR
Rhyacophilidae	Common	10-24	1	SC

Again, fair amount of sensitive taxa; again, maybe a little low abundance and – again – I'd like to see more caddisflies. Epeorus present.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	6	27.3
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	7	50.0
Hilsenhoff Biotic Index	2.39	102.7
Shannon Diversitiy	1.46	55.4
	SSWAP IBI	55.6

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

?

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	17	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	16	10. Bank Vegetation	16
3. Embeddedness	14	7. Frequency of Riffles	17	11. Grazing/Disruptive Pressure	17
4. Velocity/Depth Regime	15	8. Channel Flow Status	17	12. Riparian Zone Width	14

Instream Score (1. + 2. + 3. + 6.) = 62 Riparian Score (9. + 10. + 12.) = 45 Total Score = 190

Field Measurements

Lab samples

Temperature (°C)	12.4	Dissolved Oxygen (mg/L)	10.5	Flow (CFS)	0
pH	8.3	Alkalinity (mg/L as CaCO3)	0	Conductivity	327

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20060426-1400-gkenderes)	
Fish Consumption		
Potable Water Supply		
Recreation		

Mostly optimal – a couple suboptimal – habitat scores.

pH 8.3; Conductivity 327.

TMDL Information (if any)

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

File Edit View Tools Window Help Adobe PDF

Type a question for help

95% Close Setup

Station ID 20080521-1420-mpulket **Stream Name** Roberts Run (01185210)
Secondary Station ID Multihabitat Special Protection Development
Survey ID 59070 **Sample Method** Multihabitat: 10 Jabs, 200 subsample
Collection Date 20080521 **Collection Time** 1420 **Latitude** 39.7559792 **Longitude** -80.3174434
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Sampled 100 yards upstream of the Blockhouse (SR 3007) bridge. After crossing the stream, the road becomes SR 3008.

Biology / Habitat Comments

Land Use Comments

Station Impairment Status Comments

Taxa List

grids from first pan: 4 | # grids from second pan: 0 | Subsample Size: 176

Taxa Name	Individuals	PTV	FFG	BCG Attribute (coldwater)	BCG Attribute (warmwater)
Ameletus	1	0	CG	2	2
Baetidae	1	6	CG	3	3
Baetis	14	6	CG	4	5
Centroptilum	2	2	CG	3	3
Nixe	1	2	SC	1	1
Stenacron	4	4	SC	4	4
Stenonema	3	4	SC	4	4
Eurylophella	1	4	SC	3	2
Caenis	32	7	CG	5	5
Leptophlebiidae	1	4	CG	2	2
Aeshnidae	1	3	PR	0	0
Calopteryx	1	6	PR	4	4
Perlidae	2	3	PR	3	3
Perlesta	2	4	PR	3	3
Dytiscidae	2	5	PR	4	4
Dubiraphia	5	6	SC	4	4
Simulium	1	6	FC	5	5
Chironomidae	88	6	CG	5	5
Physidae	2	8	SC	5	5
Sphaeriidae	3	8	FC	0	0
Oligochaeta	8	10	CG	5	5
Orconectes	1	6	CG	4	4

any EV indicator taxa names are highlighted

Wholly decent mayfly diversity; 3 Baetid taxa; 4 Heptageniids. 32 Caenis. No caddisflies. 88 midges.

Some sensitive taxa, but mostly facultative/tolerant – in terms of both richness and abundance.

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

File Edit View Tools Window Help Adobe PDF — Type a question for help

95% Close Setup

Metric Names	Raw Metric Values	Standardized Metric Values: Freestone Riffle-Run 6D200 2009 small	6D200 2009 large	6D200 2007	2D100	Multihabitat Pool-Glide	Limestone
Total Richness	22	66.7	66.7	62.9		71.0	118.9
Ephemeroptera Richness	10					166.7	
Trichoptera Richness	0					0.0	
EPT Richness	12			52.2	78.4	70.6	150.0
Trichoptera Richness (PTV 0-4)	0				0.0		
EPT Richness (PTV 0-4)	9	47.4	50.0				
Beck's Index (version 3)	5	13.2	16.7	12.8			
Beck's Index (version 4)	11				55.3	50.0	
FC + PR + SH Richness	7				60.3		
Hilsenhoff Biotic Index	6.13	47.7	51.6	47.1	57.4		61.5
% Inolerant Individuals (PTV 0-3)	4.0	4.7	6.0				15.1
% Intolerant Individuals (PTV 0-5)	11.4			12.3			
% Tolerant Individuals (PTV 7-10)	25.6						75.2
Shannon Diversity	1.84	64.4	65.1	63.6		75.9	96.0
IBI score		**40.7**	**42.7**	**41.8**	**50.3**	**61.2**	**69.6**

No caddisflies floors that metric; others are great to good.

BCG Richness Ratio	0.67	% Ephemeroptera	34.1	% Baetis	8.0	% Chironomidae	50.0
BCG % Individuals Ratio	0.07	% Plecoptera	2.3	% Ephemerella	0.0	% Simuliidae	0.6
EV Indicator Taxa	2	% Trichoptera	0.0	% Dominant Taxon	50.0	% Prosimulium	0.0

Not impaired N — Biology impaired N — Habitat impaired N — Insufficient data Y

Rock pick influenced assessment N — Impact is localized N — Re-evaluate designated use N

Physical Habitat Assessment

Pool-Glide Assessment? N

1. Instream Cover	0	5. Channel Alteration	0	9. Contition of Banks	0
2. Epifaunal Substrate	0	6. Sediment Deposition	0	10. Bank Vegetative Protection	0
3. Embeddedness	0	7. Frequency of Riffles	0	11. Grazing/Disruptive Pressure	0
4. Velocity/Depth Regimes	0	8. Channel Flow Status	0	12. Riparian Vegetative Zone Width	0

Instream Score (1. + 2. + 3. + 6.) = 0 — Riparian Score (9. + 10. + 12.) = 0 — Total Score = 0

Field Measurements

Lab samples 1549 036

Temperature (°C)	0	Dissolved Oxygen (mg/L)	0	Flow (CFS)	0
pH	0	Total Alkalinity (mg/L as CaCO3)	0	Conductivity (uS/cm)	0

Use Assessment Status for Stream Reach

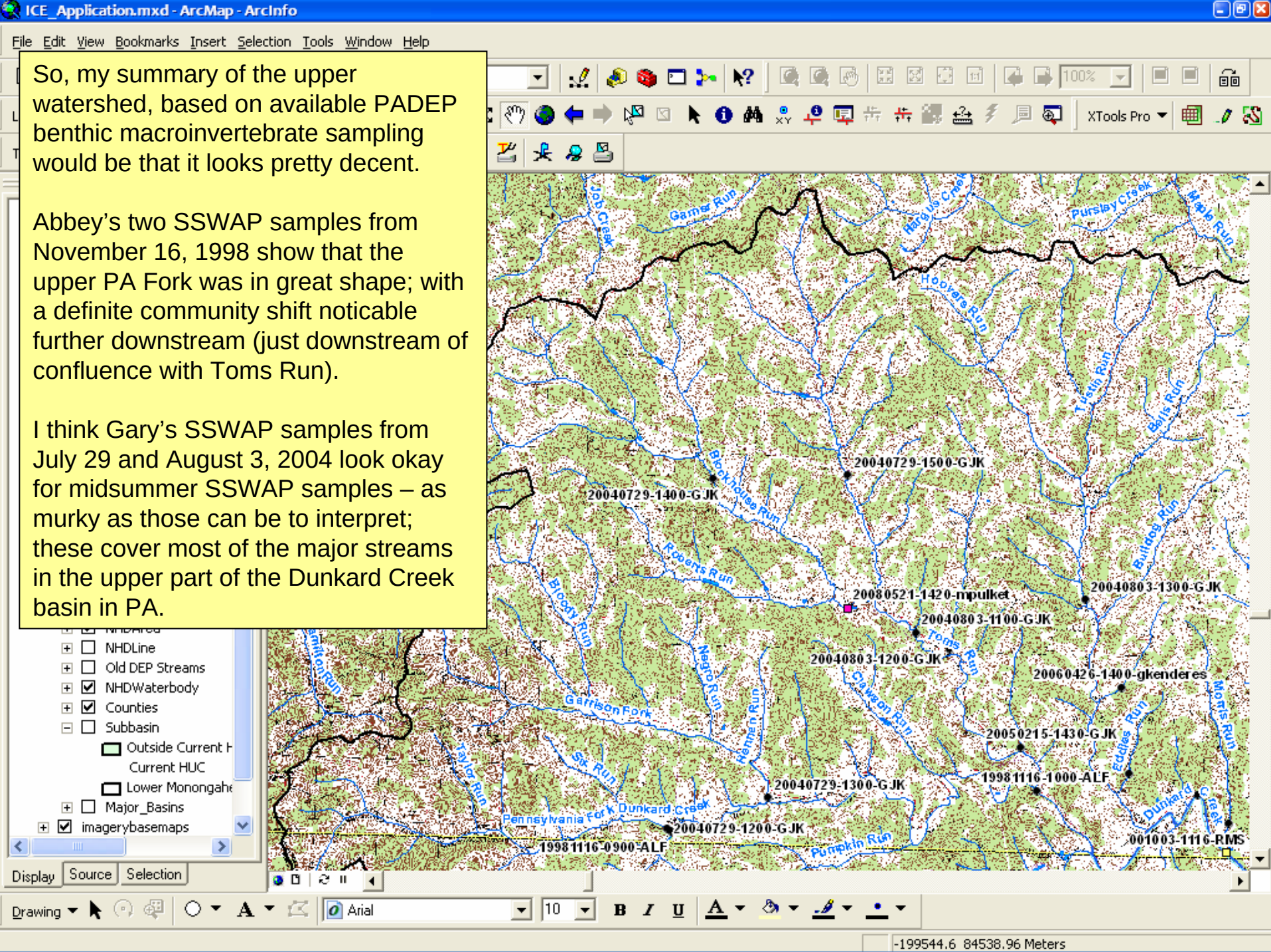
Aquatic Life Attaining (20040803-1100-GJK)

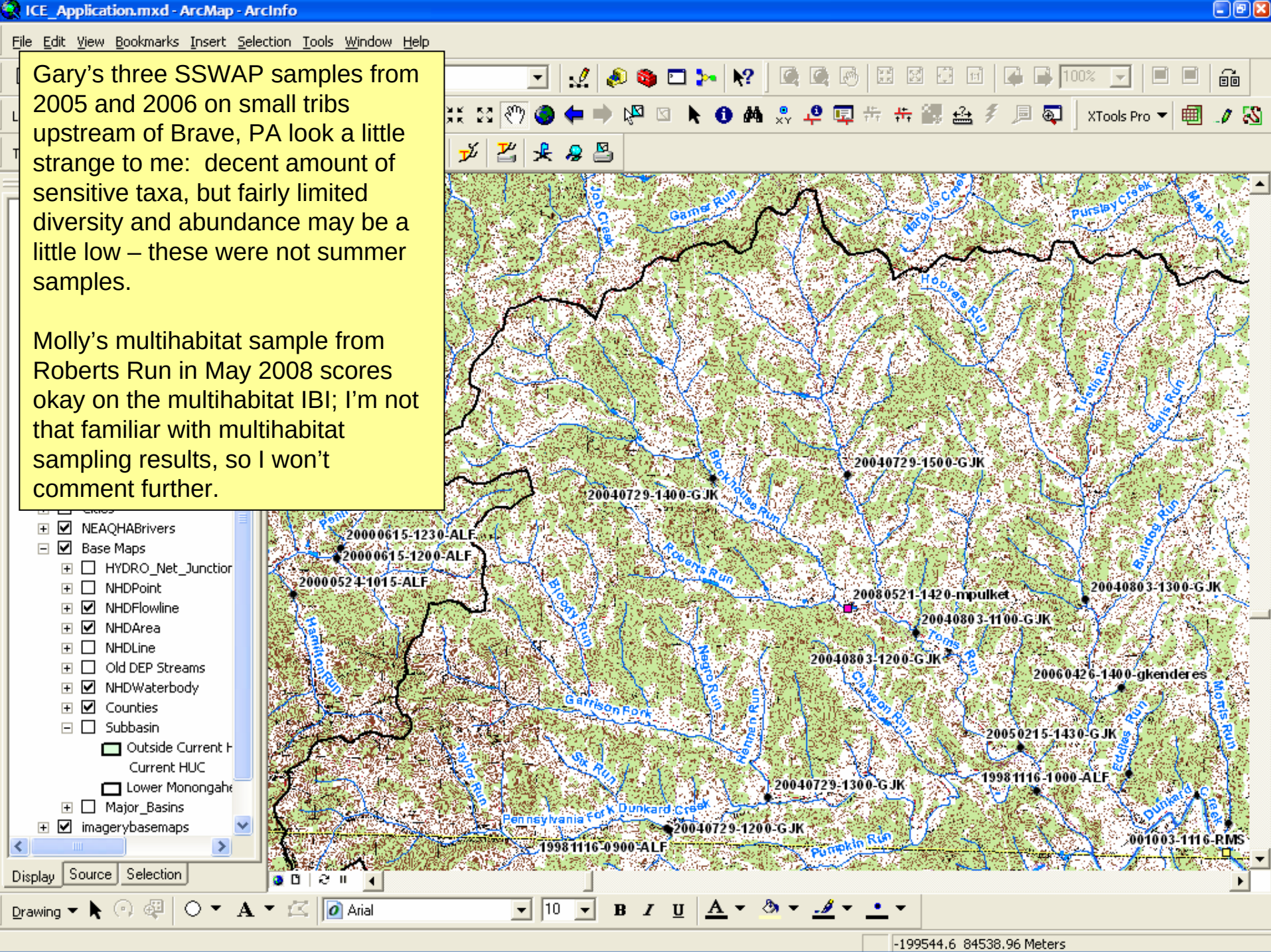
Fish Consumption

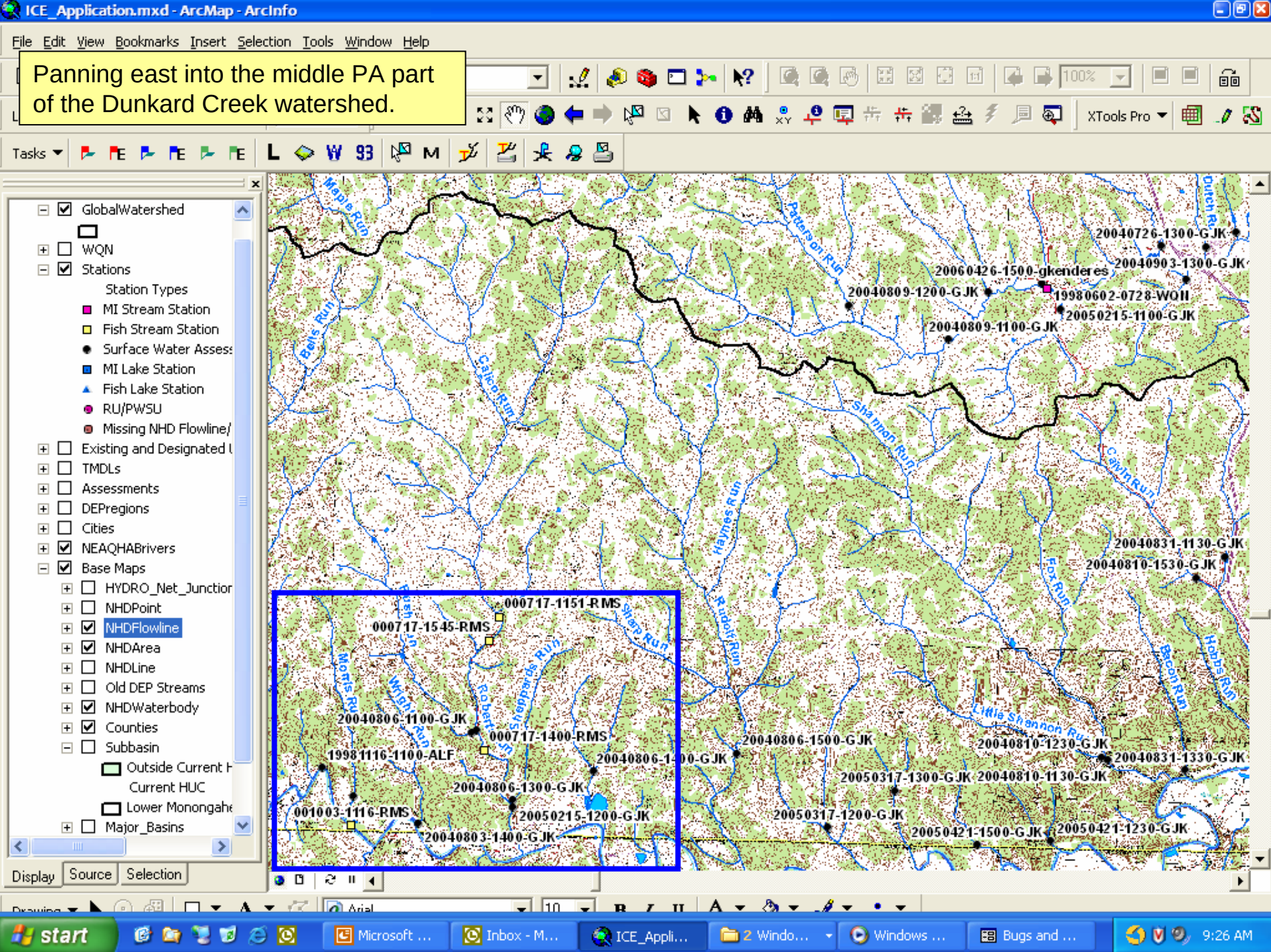
Potable Water Supply

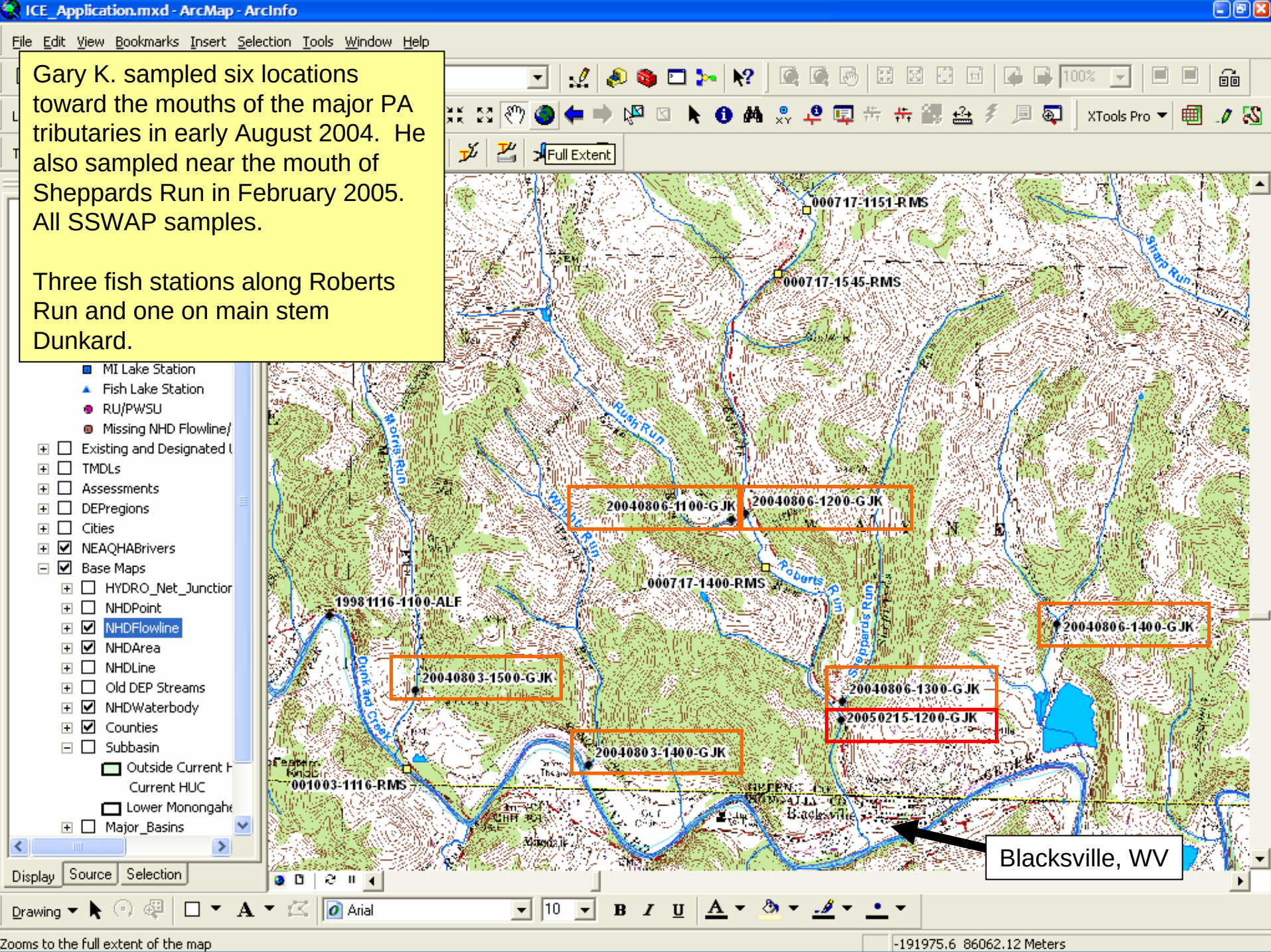
Habitat data not available/entered.

No chems currently in SLIMS.


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
So, my summary of the upper watershed, based on available PADEP benthic macroinvertebrate sampling would be that it looks pretty decent.
Abbey's two SSWAP samples from November 16, 1998 show that the upper PA Fork was in great shape; with a definite community shift noticable further downstream (just downstream of confluence with Toms Run).
I think Gary's SSWAP samples from July 29 and August 3, 2004 look okay for midsummer SSWAP samples – as murky as those can be to interpret; these cover most of the major streams in the upper part of the Dunkard Creek basin in PA.
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Major_Basins
imagerybasemaps
Display Source Selection
Drawing
Arial
10
20040729-1500-GJK
20040729-1400-GJK
20080521-1420-mpulket
20040803-1300-GJK
20040803-1100-GJK
20040803-1200-GJK
20060426-1400-gkenderes
20050215-1430-GJK
19981116-1000-ALF
20040729-1300-GJK
20040729-1200-GJK
19981116-0900-ALF
001003-1116-RMS
Gamer Run
Pursley Creek
Hoovers Run
Tustin Run
Bells Run
Bulldog Run
Roberts Run
Bloody Run
Toms Run
Negro Run
Garrison Fork
Six Run
Pennsylvania Fork Dunkard Creek
Pumpkin Run
Dunkard Creek
-199544.6 84538.96 Meters


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Gary's three SSWAP samples from 2005 and 2006 on small tribs upstream of Brave, PA look a little strange to me: decent amount of sensitive taxa, but fairly limited diversity and abundance may be a little low – these were not summer samples.
Molly's multihabitat sample from Roberts Run in May 2008 scores okay on the multihabitat IBI; I'm not that familiar with multihabitat sampling results, so I won't comment further.
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
imagerybasemaps
Display Source Selection
Drawing
Arial
10
XTools Pro
20040729-1500-GJK
20040729-1400-GJK
20000615-1230-ALF
20000615-1200-ALF
20000524-1015-ALF
20080521-1420-mpulket
20040803-1300-GJK
20040803-1100-GJK
20040803-1200-GJK
20060426-1400-gkenderes
20050215-1430-GJK
19981116-1000-ALF
20040729-1300-GJK
20040729-1200-GJK
19981116-0900-ALF
001003-1116-RMS
Job Creek
Gamer Run
Hargus Creek
Pursley Creek
Maple Run
Hoovers Run
Tustin Run
Bells Run
Bulldog Run
Block House Run
Roberts Run
Bloody Run
Hamilton Run
Negro Run
Garrison Fork
Hennen Run
Oliveon Run
Toms Run
Morris Run
Eddies Run
Six Run
Taylor Run
Pennsylvania Fork Dunkard Creek
Pumpkin Run
Dunkard Creek
-199544.6 84538.96 Meters


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Panning east into the middle PA part of the Dunkard Creek watershed.
XTools Pro
Tasks
GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assess
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated U
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
Display
Source
Selection
Maple Run
Bells Run
Calico Run
Patterson Run
Shannon Run
Haynes Run
Rudolf Run
Fox Run
Cawin Run
Bacon Run
Hobbs Run
Little Shannon Run
Morris Run
Wright Run
Robert Run
Sheppards Run
Shep Run
20040726-1300-GJK
20040903-1300-GJK
20060426-1500-gkenderes
20040809-1200-GJK
19980602-0728-WQN
20050215-1100-GJK
20040809-1100-GJK
20040831-1130-GJK
20040810-1530-GJK
000717-1151-RMS
000717-1545-RMS
20040806-1100-GJK
000717-1400-RMS
19981116-1100-ALF
20040806-1500-GJK
20040810-1230-GJK
20040831-1330-GJK
20050317-1300-GJK
20040810-1130-GJK
20040806-1300-GJK
001003-1116-RMS
20050215-1200-GJK
20050317-1200-GJK
20040803-1400-GJK
20050421-1500-GJK
20050421-1230-GJK
start
Microsoft ...
Inbox - M...
ICE_Appli...
2 Windo...
Windows ...
Bugs and ...
9:26 AM


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Gary K. sampled six locations toward the mouths of the major PA tributaries in early August 2004. He also sampled near the mouth of Sheppards Run in February 2005. All SSWAP samples.
Three fish stations along Roberts Run and one on main stem Dunkard.
Full Extent
XTools Pro
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
Display
Source
Selection
000717-1151-RMS
000717-1545-RMS
Sharp Run
Rush Run
Morris Run
Wilson Run
Roberts Run
Sheppards Run
Dunkard Creek
20040806-1100-GJK
20040806-1200-GJK
000717-1400-RMS
19981116-1100-ALF
20040806-1400-GJK
20040803-1500-GJK
20040806-1300-GJK
20050215-1200-GJK
20040803-1400-GJK
001003-1116-RMS
Blacksville
Blacksville, WV
Drawing
Arial
10
Zooms to the full extent of the map
-191975.6 86062.12 Meters

Station ID 20040803-1400-GJK **Stream Name** Wrights Run (01193697)
Secondary Station ID
Survey ID 53891 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7224335 **Longitude** -80.2325595
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Blacksville
From Macdale WV take route 7 west to Delta Road 48 and right onto T311 to bridge crossing Wrights Run - Sampled downstream 20 feet from bridge (culvert)

Biology / Physical Habitat Comments
Collected (1) dace
Collected (1) salamander
Leuctridae common

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Common	10-24	3	SC
Leuctridae	Common	10-24	0	SH
Philopotamidae	Rare	<3	3	FC
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC
Elmidae	Present	3-9	5	CG
Tipulidae	Rare	<3	4	SH

Doesn't look too bad for an early August SSWAP sample.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	3.20	91.7
Shannon Diversitiy	1.91	72.5
	SSWAP IBI	52.6

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

File Edit View Tools Window Help Adobe PDF — Type a question for help

95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	14	5. Channel Alteration	13	9. Condition of Banks	16
2. Epifaunal Substrate	15	6. Sediment Deposition	12	10. Bank Vegetation	16
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	10	8. Channel Flow Status	13	12. Riparian Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 54 Riparian Score (9. + 10. + 12.) = 44 Total Score = 165

Field Measurements

Lab samples

Temperature (°C)	20.5	Dissolved Oxygen (mg/L)	8.9	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	432

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20040803-1400-GJK)	
Fish Consumption		
Potable Water Supply		
Recreation		

Habitat mosty suboptimal.

Conductivity 432.

TMDL Information (if any)

Station ID 20040803-1500-GJK **Stream Name** Morris Run (01192963)
Secondary Station ID
Survey ID 53893 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7262311 **Longitude** -80.244798
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Blacksville
From Macdale WV take route 7 west to Delta Road 48 to Toms Run Road to Morris Run Road - Travel .25 miles up Morris Run Road to cemetery - Sampled stream across from cemetery

Biology / Physical Habitat Comments
(1) salamander collected
Leuctridae common

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Heptageniidae	Present	3-9	3	SC
Leptophlebiidae	Present	3-9	4	CG
Ephemeridae	Rare	<3	4	CG
Cordulegastridae	Rare	<3	3	PR
Leuctridae	Common	10-24	0	SH
Perlidae	Present	3-9	3	PR
Nigronia	Rare	<3	2	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Abundant	25-100	4	SC
Oligochaeta	Rare	<3	10	CG
Cambaridae	Present	3-9	6	CG

Psephenus dominant. Looks okay otherwise (for summer SSWAP). Ephemeridae.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	3.56	86.9
Shannon Diversitiy	1.82	69.0
	SSWAP IBI	56.0

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

File Edit View Tools Window Help Adobe PDF — Type a question for help

95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	13	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	15	10. Bank Vegetation	15
3. Embeddedness	14	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	10	8. Channel Flow Status	15	12. Riparian Zone Width	14

Instream Score (1. + 2. + 3. + 6.) = 61 Riparian Score (9. + 10. + 12.) = 44 Total Score = 174

Field Measurements

Lab samples

Temperature (°C)	20	Dissolved Oxygen (mg/L)	8.3	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	356

Use Assessment Status for Stream Reach

Designated Use Existing Use

Aquatic Life Attaining (20040803-1500-GJK)

Fish Consumption

Potable Water Supply

Recreation

Habitat decidedly suboptimal.

Conductivity 356.

TMDL Information (if any)

Station ID 20040806-1100-GJK **Stream Name** Rush Run (01193238)
Secondary Station ID
Survey ID 53924 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7359136 **Longitude** -80.2229768
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Blacksville
From Blacksville head north on 218 1 mile to Rush Run Road - Sampled 100 feet off confluence with Roberts Run

Biology / Physical Habitat Comments
Stream flowlow
Schools of dace observed in pools

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Impaired biology - AMD - metals (white substrate out of water)

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Nigronia	Present	3-9	2	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Common	10-24	6	
Tipulidae	Rare	<3	4	SH
Physidae	Rare	<3	8	SC

No mayflies; it was August, but still expect a couple taxa. No stoneflies. Hydropsychidae only caddisfly taxa. Abundance low. Impaired.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	6	27.3
EPT Richness (PTV 0 - 4)	0	0.0
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	5.00	67.5
Shannon Diversitiy	1.45	55.0
	SSWAP IBI	31.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	14	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	14	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	13	8. Channel Flow Status	13	12. Riparian Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 59 Riparian Score (9. + 10. + 12.) = 42 Total Score = 172

Field Measurements

Lab samples

Temperature (°C)	17	Dissolved Oxygen (mg/L)	11.6	Flow (CFS)	
pH	8.4	Alkalinity (mg/L as CaCO3)		Conductivity	2435

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Impaired (20040806-1100-GJK) Abandoned Mine Drainage - Metals White coloration on rocks out of water.	
Fish Consumption		
Potable Water Supply		

Habitat suboptimal.

pH 8.4; Conductivity 2435!

Station ID 20040806-1200-GJK **Stream Name** Roberts Run (01193199)
Secondary Station ID
Survey ID 53927 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7362351 **Longitude** -80.2220557
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Blacksville
From Blacksville WV north on 218 1 mile ot Rush Run Road - Pulloff at bridge - Sampled downstream off bridge 50 feet

Biology / Physical Habitat Comments
Periphyton covering substrate
Collected (3) darters

Land Use Comments
Other; Road follows streams

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Common	10-24	3	SC
Sialidae	Rare	<3	6	PR
Nigronia	Present	3-9	2	PR
Hydropsychidae	Abundant	25-100	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Rare	<3	6	
Cambaridae	Rare	<3	6	CG

Three mayfly families. No stoneflies. Hydropsychidae only caddisfly family. Not awful for a summer SSWAP sample; not great either.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	2	18.2
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	4.36	76.1
Shannon Diversitiy	1.58	59.8
	SSWAP IBI	40.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	Y	
17b. Special conditions (impaired)		N

17c. Special conditons description

Heptageniidae and Isonychiidae collected
Nigronia present

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment Y Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	15	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	15	10. Bank Vegetation	15
3. Embeddedness	12	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	15	8. Channel Flow Status	16	12. Riparian Zone Width	14

Instream Score (1. + 2. + 3. + 6.) = 59 Riparian Score (9. + 10. + 12.) = 44 Total Score = 179

Field Measurements

Lab samples

Temperature (°C)	20.6	Dissolved Oxygen (mg/L)	12.5	Flow (CFS)	
pH	8.4	Alkalinity (mg/L as CaCO3)		Conductivity	483

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040806-1200-GJK)

Fish Consumption

Potable Water Supply

Habitat suboptimal.

pH 8.4; Conductivity 483.

Station ID 20040806-1300-GJK **Stream Name** Sheppards Run (01546675)
Secondary Station ID
Survey ID 53930 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.726196 **Longitude** -80.2149241
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Blacksville
From Blacksville WV - Take 218 north <.5 miles - to pulloff on right just before bridge - Sampled upstream 30 feet

Biology / Physical Habitat Comments
Stream flow low
Heptageniidae common

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Common	10-24	3	SC
Leptophlebiidae	Present	3-9	4	CG
Leuctridae	Present	3-9	0	SH
Nigronia	Present	3-9	2	PR
Philopotamidae	Rare	<3	3	FC
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Present	3-9	6	
Tipulidae	Present	3-9	4	SH
Turbellaria	Rare	<3	9	

Looks okay for a summer SSWAP sample during low flow.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	3.95	81.6
Shannon Diversitiy	2.15	81.6
	SSWAP IBI	55.6

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	15	9. Condition of Banks	16
2. Epifaunal Substrate	15	6. Sediment Deposition	13	10. Bank Vegetation	16
3. Embeddedness	13	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	14	8. Channel Flow Status	14	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 57 Riparian Score (9. + 10. + 12.) = 48 Total Score = 179

Field Measurements

Lab samples

Temperature (°C)	14.6	Dissolved Oxygen (mg/L)	5.8	Flow (CFS)	
pH	7.9	Alkalinity (mg/L as CaCO3)		Conductivity	346

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20040806-1300-GJK)	
Fish Consumption		
Potable Water Supply		
Recreation		

Habitat a bit better.

pH 7.9; Conductivity 346.

TMDL Information (if any)

Station ID 20040806-1400-GJK **Stream Name** Dunkard Creek (Unamed Trib 99419372 To)
Secondary Station ID
Survey ID 53933 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7306872 **Longitude** -80.2000773
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Blacksville
From Blacksville WV take route 7 east to county highway 712 to T313 along RR Tracks to T524 pass ponds to T325 - Pulloff and sampled downstream of confluence of streams

Biology / Physical Habitat Comments
Low flow in stream
Heptageniidae abundant

Land Use Comments
Public hunting area making up upper watershed (Consol, Inc. and Game Commission coop)

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Heptageniidae	Abundant	25-100	3	SC
Leptophlebiidae	Present	3-9	4	CG
Leuctridae	Present	3-9	0	SH
Nigronia	Present	3-9	2	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC

Alright for a summer SSWAP sample during low flow. Short taxa list.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	6	27.3
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	3.30	90.4
Shannon Diversitiy	1.37	51.8
	SSWAP IBI	45.1

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	Y	
17b. Special conditions (impaired)		N

17c. Special conditons description

Leuctridae and Heptageniidae collected
Nigronia present

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	14	5. Channel Alteration	15	9. Condition of Banks	12
2. Epifaunal Substrate	16	6. Sediment Deposition	11	10. Bank Vegetation	13
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	13	8. Channel Flow Status	11	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 54 Riparian Score (9. + 10. + 12.) = 40 Total Score = 165

Field Measurements

Lab samples

Temperature (°C)	17.2	Dissolved Oxygen (mg/L)	9.8	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	239

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040806-1400-GJK)

Fish Consumption

Potable Water Supply

Habitat a little dicey, especially bank parameters and sediment deposition / embeddedness.

pH 8.0; Conductivity 239.

Station ID 20050215-1200-GJK **Stream Name** Sheppards Run (01546675)
Secondary Station ID
Survey ID 54353 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7252260 **Longitude** -80.2150162
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Blacksville
From Blacksville WV take 218 north ~1/2 mile and pulloff just before Sheppards Run Road - Sampled Roberts Run straight in downstream of Sheppards Run.

Biology / Physical Habitat Comments
Flows up
10 total taxa
EPT taxa collected

Land Use Comments
Other - Roads follow stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Heptageniidae	Present	3-9	3	SC
Capniidae	Present	3-9	3	SH
Perlodidae	Present	3-9	2	PR
Chloroperlidae	Present	3-9	0	PR
Hydropsychidae	Present	3-9	5	FC
Limnephilidae	Present	3-9	4	SH
Elmidae	Rare	<3	5	CG
Chironomidae(other)	Present	3-9	6	
Tipulidae	Present	3-9	4	SH
Corbiculidae	Rare	<3	4	FC

February 2005 sample. Abundance a little low. Only one mayfly family. Nice stonefly taxa. This is not too far downstream of the AMD-impaired SSWAP station further up at the mouth of Rush Run – may still be seeing some effects here? Particularly on abundance and mayflies?

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	10	45.5
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	3.46	88.2
Shannon Diversitiy	2.24	85.0
	SSWAP IBI	58.5

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	16	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	12	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	16	8. Channel Flow Status	16	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 57 Riparian Score (9. + 10. + 12.) = 45 Total Score = 182

Field Measurements

Lab samples

Temperature (°C)	6.5	Dissolved Oxygen (mg/L)	12.4	Flow (CFS)	
pH	8.2	Alkalinity (mg/L as CaCO3)		Conductivity	113

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20050215-1200-gkenderes)

Fish Consumption

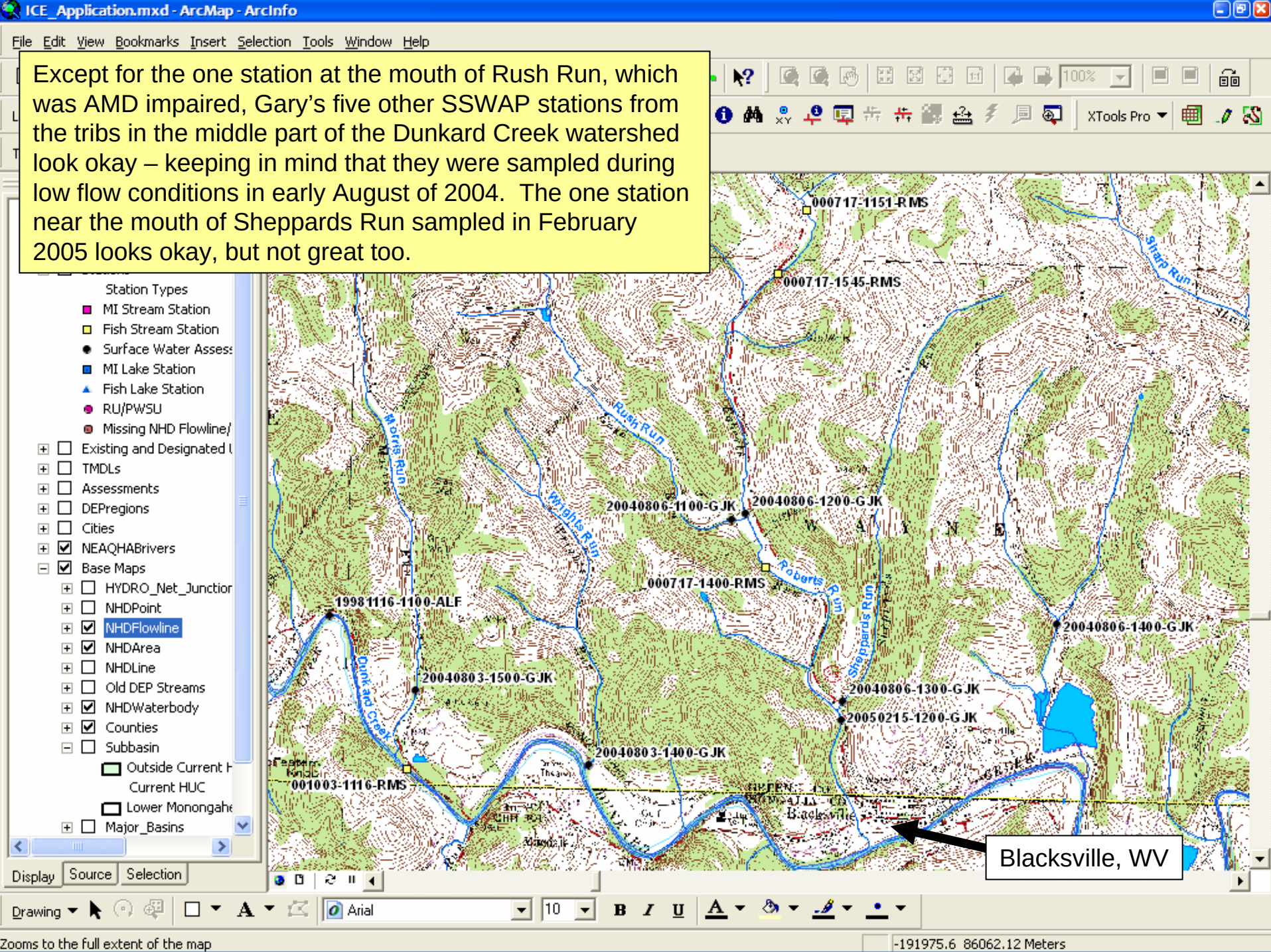
Potable Water Supply

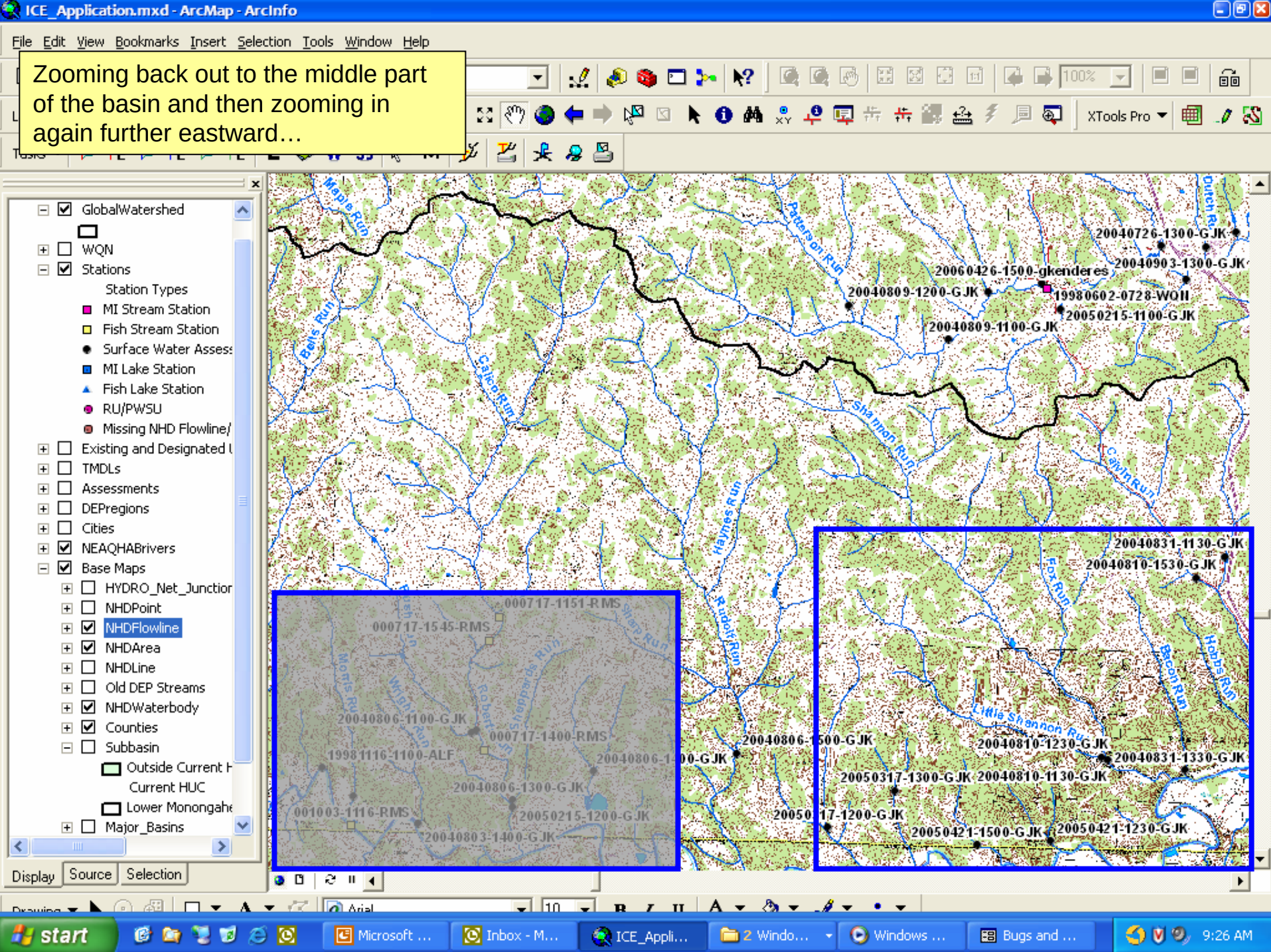
Recreation

TMDL Information (if any)

Habitat okay other than embeddedness and sediment deposition being a little low.

pH 8.2; Conductivity 113, way down from Rush Run site during August 2004 low flow.


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Except for the one station at the mouth of Rush Run, which was AMD impaired, Gary's five other SSWAP stations from the tribs in the middle part of the Dunkard Creek watershed look okay – keeping in mind that they were sampled during low flow conditions in early August of 2004. The one station near the mouth of Sheppards Run sampled in February 2005 looks okay, but not great too.
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assess
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
Display Source Selection
000717-1151-RMS
000717-1545-RMS
Sharp Run
Rush Run
Morris Run
Wrights Run
20040806-1100-GJK
20040806-1200-GJK
Roberts Run
000717-1400-RMS
Sheppards Run
19981116-1100-ALF
20040806-1400-GJK
Dunkard Creek
20040803-1500-GJK
20040806-1300-GJK
20050215-1200-GJK
20040803-1400-GJK
001003-1116-RMS
Blacksville
Blacksville, WV
Drawing
Arial
10
Zooms to the full extent of the map
-191975.6 86062.12 Meters


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Zooming back out to the middle part of the basin and then zooming in again further eastward…
XTools Pro
GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assess
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/
Existing and Designated U
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
Display Source Selection
Maple Run
Pattersons Run
Dutch Run
Bells Run
Calico Run
Shannon Run
Cawin Run
Haynes Run
Rudolf Run
Fox Run
Bacon Run
Hobbs Run
Little Shannon Run
Morris Run
Wilson Run
Robert Run
Sheppards Run
Sleepy Run
20040726-1300-GJK
20040903-1300-GJK
20060426-1500-gkenderes
20040809-1200-GJK
19980602-0728-WQN
20050215-1100-GJK
20040809-1100-GJK
20040831-1130-GJK
20040810-1530-GJK
20040806-1500-GJK
20040810-1230-GJK
20040831-1330-GJK
20050317-1300-GJK
20040810-1130-GJK
20050421-1500-GJK
20050421-1230-GJK
000717-1151-RMS
000717-1545-RMS
20040806-1100-GJK
000717-1400-RMS
19981116-1100-ALF
20040806-1300-GJK
001003-1116-RMS
20050215-1200-GJK
20040803-1400-GJK
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Microsoft ...
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Windows ...
Bugs and ...
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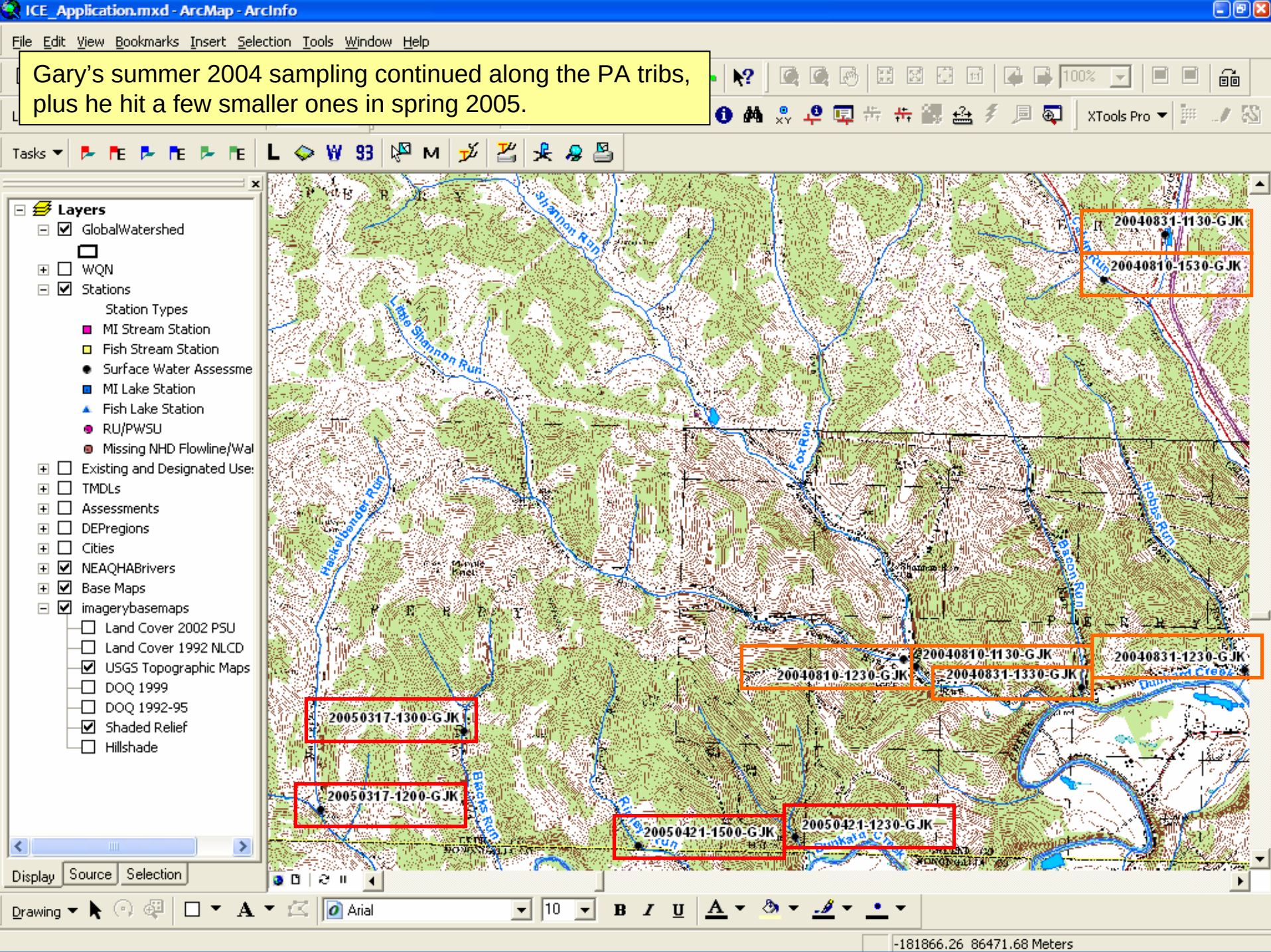
ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Gary's summer 2004 sampling continued along the PA tribs, plus he hit a few smaller ones in spring 2005.
Tasks
XTools Pro
Layers
GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display Source Selection
Shannon Run
Little Shannon Run
Fox Run
Hackelbarger Run
Bacon Run
Hobbs Run
Blacks Run
20040831-1130-GJK
20040810-1530-GJK
20040810-1130-GJK
20040831-1230-GJK
20040810-1230-GJK
20040831-1330-GJK
20050317-1300-GJK
20050317-1200-GJK
20050421-1500-GJK
20050421-1230-GJK
Drawing
Arial
10
-181866.26 86471.68 Meters

Station ID 20040810-1130-GJK **Stream Name** Shannon Run (01193327)
Secondary Station ID
Survey ID 53956 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7340738 **Longitude** -80.1036911
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris PA take Big Shannon Run Road to Little Shannon Run Road and pulloff - Sampled downstream from bridge 100 feet (below confluence with Little Shannon Run

Biology / Physical Habitat Comments
Schools of minnows in pools
Oil sheem in sample
Collected (5) rainbow darters
Periphyton covering rocks Heptageniidae abundant

Land Use Comments
Other; Roads folloe stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Common	10-24	6	CG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Abundant	25-100	3	SC
Nigronia	Rare	<3	2	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Present	3-9	6	
Athericidae	Rare	<3	2	PR

Okay summer SSWAP. No stoneflies.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	2	14.3
Hilsenhoff Biotic Index	3.91	82.2
Shannon Diversitiy	1.77	67.2
	SSWAP IBI	46.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	14	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	14	10. Bank Vegetation	16
3. Embeddedness	15	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 61 Riparian Score (9. + 10. + 12.) = 43 Total Score = 177

Field Measurements

Lab samples

Temperature (°C)	19.3	Dissolved Oxygen (mg/L)	10.3	Flow (CFS)	
pH	8.1	Alkalinity (mg/L as CaCO3)		Conductivity	366

Use Assessment Status for Stream Reach

Aquatic Life	Attaining (20040810-1130-GJK)	
Fish Consumption		
Potable Water Supply		
Recreation		

Habitat mostly high suboptimal.

pH 8.1; Conductivity 366.

TMDL Information

Station ID 20040810-1230-GJK **Stream Name** Little Shannon Run (01179679)
Secondary Station ID
Survey ID 53958 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7345560 **Longitude** -80.1048082
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris PA take Big Shannon Run Road to Little Shannon Run Road and pulloff - Sampled upstream of confluence 70 feet

Biology / Physical Habitat Comments
Periphyton covering rocks
Gravel and cobble deposited at mouth of stream

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Common	10-24	3	SC
Leptophlebiidae	Present	3-9	4	CG
Leuctridae	Present	3-9	0	SH
Nigronia	Rare	<3	2	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Present	3-9	6	
Athericidae	Present	3-9	2	PR

Okay summer SSWAP. Abundance a little low?

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	10	45.5
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	5	35.7
Hilsenhoff Biotic Index	3.74	84.5
Shannon Diversitiy	2.09	79.2
	SSWAP IBI	56.3

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment Y Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	15	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	10	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	13
4. Velocity/Depth Regime	10	8. Channel Flow Status	13	12. Riparian Zone Width	10

Instream Score (1. + 2. + 3. + 6.) = 54 Riparian Score (9. + 10. + 12.) = 40 Total Score = 160

Field Measurements

Lab samples

Temperature (°C)	19.5	Dissolved Oxygen (mg/L)	9.7	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	328

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040810-1230-GJK)

Fish Consumption

Potable Water Supply

Recreation

10 for velocity/depth regimes, sediment deposition and riparian width; low to mid suboptimal otherwise.

pH 8.0; Conductivity 328.

TMDL Information (if any)

Station ID 20040810-1530-GJK **Stream Name** Calvin Run (01170955)
Secondary Station ID
Survey ID 53962 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7608223 **Longitude** -80.0878766
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Garards Fort
From Mt Morris take 19 north pass Mason Ridge Road 900 feet - Pulloff on left - Sampled straight in to stream

Biology / Physical Habitat Comments
Collected (3) RainbowDarters
Collected (1) salamander
Psephenidae abundant
Athericidae common

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not Impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Present	3-9	3	SC
Leptophlebiidae	Present	3-9	4	CG
Cordulegastridae	Rare	<3	3	PR
Leuctridae	Common	10-24	0	SH
Nigronia	Rare	<3	2	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Abundant	25-100	4	SC
Athericidae	Common	10-24	2	PR
Cambaridae	Rare	<3	6	CG

Psephenus dominant; okay summer SSWAP otherwise.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	12	54.5
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	5	35.7
Hilsenhoff Biotic Index	3.08	93.4
Shannon Diversitiy	1.97	74.7
	SSWAP IBI	60.8

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	16	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	11	10. Bank Vegetation	16
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	14	8. Channel Flow Status	12	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 56 Riparian Score (9. + 10. + 12.) = 47 Total Score = 176

Field Measurements

Lab samples

Temperature (°C)	18.9	Dissolved Oxygen (mg/L)	9.4	Flow (CFS)	
pH	8.2	Alkalinity (mg/L as CaCO3)		Conductivity	416

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040810-1530-GJK)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Embeddedness and sediment deposition a little low.

pH 8.2; Conductivity 416.

Station ID 20040831-1130-GJK **Stream Name** North Branch Calvin Run (01193032)
Secondary Station ID
Survey ID 54084 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7639881 **Longitude** -80.0825969
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Garards Fort
Mt Morris take 19 north to Branch Road on right after crossing North Branch Calvin Run - Traveled .25 miles up Branch Road and sampled stream downstream of clearing pulloff 200 feet.

Biology / Physical Habitat Comments
Hexatoma collected
Leptophiebiidae present and most dominant taxa

Land Use Comments
Other; Interstate 79 paralles stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Present	3-9	3	SC
Leptophlebiidae	Present	3-9	4	CG
Cordulegastridae	Rare	<3	3	PR
Leuctridae	Present	3-9	0	SH
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Present	3-9	6	
Tipulidae	Present	3-9	4	SH
Cambaridae	Rare	<3	6	CG

A few weeks later… okay summer SSWAP; abundance maybe a little low.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	3.93	81.9
Shannon Diversitiy	2.34	88.8
	SSWAP IBI	55.7

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	16	9. Condition of Banks	16
2. Epifaunal Substrate	16	6. Sediment Deposition	12	10. Bank Vegetation	16
3. Embeddedness	13	7. Frequency of Riffles	12	11. Grazing/Disruptive Pressure	17
4. Velocity/Depth Regime	10	8. Channel Flow Status	14	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 56 Riparian Score (9. + 10. + 12.) = 48 Total Score = 173

Field Measurements

Lab samples

Temperature (°C)	18.1	Dissolved Oxygen (mg/L)	7.3	Flow (CFS)	
pH	8.3	Alkalinity (mg/L as CaCO3)		Conductivity	463

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040831-1130-GJK)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Embeddedness, sediment deposition, and velocity/depth regimes scored a little low.

pH 8.3; Conductivity 463.

Station ID 20040831-1230-GJK **Stream Name** Hobbs Run (01177150)
Secondary Station ID
Survey ID 54086 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7344039 **Longitude** -80.0746424
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mount Morris take T808 to bridge crossing stream and pulloff on right (gravel) - Sampled upstream of bridge 20 feet

Biology / Physical Habitat Comments
Collected (1) salamander
Observed Northern Hog sucker and Creek Chubs in pool
Low flow conditions
Heptageniidae present and Nigronia rare

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Present	3-9	3	SC
Nigronia	Rare	<3	2	PR
Hydropsychidae	Common	10-24	5	FC
Psephenidae	Rare	<3	4	SC
Simuliidae	Rare	<3	6	FC

Very short taxa list – low abundance; may be attributable to extremely small drainage area and flow conditions.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	6	27.3
EPT Richness (PTV 0 - 4)	1	9.1
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	4.68	71.7
Shannon Diversitiy	1.39	52.5
	SSWAP IBI	33.5

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		Y
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	Y	
17b. Special conditions (impaired)		N

17c. Special conditons description

Heptageniidae present
Nigronia collected

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment Y Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	13	5. Channel Alteration	12	9. Condition of Banks	15
2. Epifaunal Substrate	15	6. Sediment Deposition	15	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	14
4. Velocity/Depth Regime	10	8. Channel Flow Status	15	12. Riparian Zone Width	10

Instream Score (1. + 2. + 3. + 6.) = 56 Riparian Score (9. + 10. + 12.) = 40 Total Score = 162

Field Measurements

Lab samples

Temperature (°C)	21.4	Dissolved Oxygen (mg/L)	5.3	Flow (CFS)	
pH	8.3	Alkalinity (mg/L as CaCO3)		Conductivity	363

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040831-1230-GJK)

Fish Consumption

Potable Water Supply

Habitat mid to low suboptimal – road impacts?

pH 8.3; Conductivity 353.

Station ID 20040831-1330-GJK **Stream Name** Bacon Run (01168564)
Secondary Station ID
Survey ID 54089 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7329337 **Longitude** -80.0890609
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris take T808 to T584 and pulloff on gravel left side just off intersection - Sampled upstream of bridge crossing 200 feet next to cut grass area

Biology / Physical Habitat Comments
Collected (2) salamanders
Collected (1) darter
Low flow conditions
Heptageniidae common and most dominant taxa

Land Use Comments
Other; Road follows stream

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Common	10-24	3	SC
Perlidae	Present	3-9	3	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Present	3-9	4	SC
Tipulidae	Rare	<3	4	SH
Cambaridae	Present	3-9	6	CG

Kinda short, but not bad for summer. EPT present. Still summer low flow.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	8	36.4
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	0	0.0
Hilsenhoff Biotic Index	3.66	85.6
Shannon Diversitiy	1.89	71.6
	SSWAP IBI	46.0

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	14	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	10	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	12
4. Velocity/Depth Regime	14	8. Channel Flow Status	10	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 54 Riparian Score (9. + 10. + 12.) = 41 Total Score = 159

Field Measurements

Lab samples

Temperature (°C)	21.6	Dissolved Oxygen (mg/L)		Flow (CFS)	
pH	8.3	Alkalinity (mg/L as CaCO3)		Conductivity	322

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040831-1330-GJK)

Fish Consumption

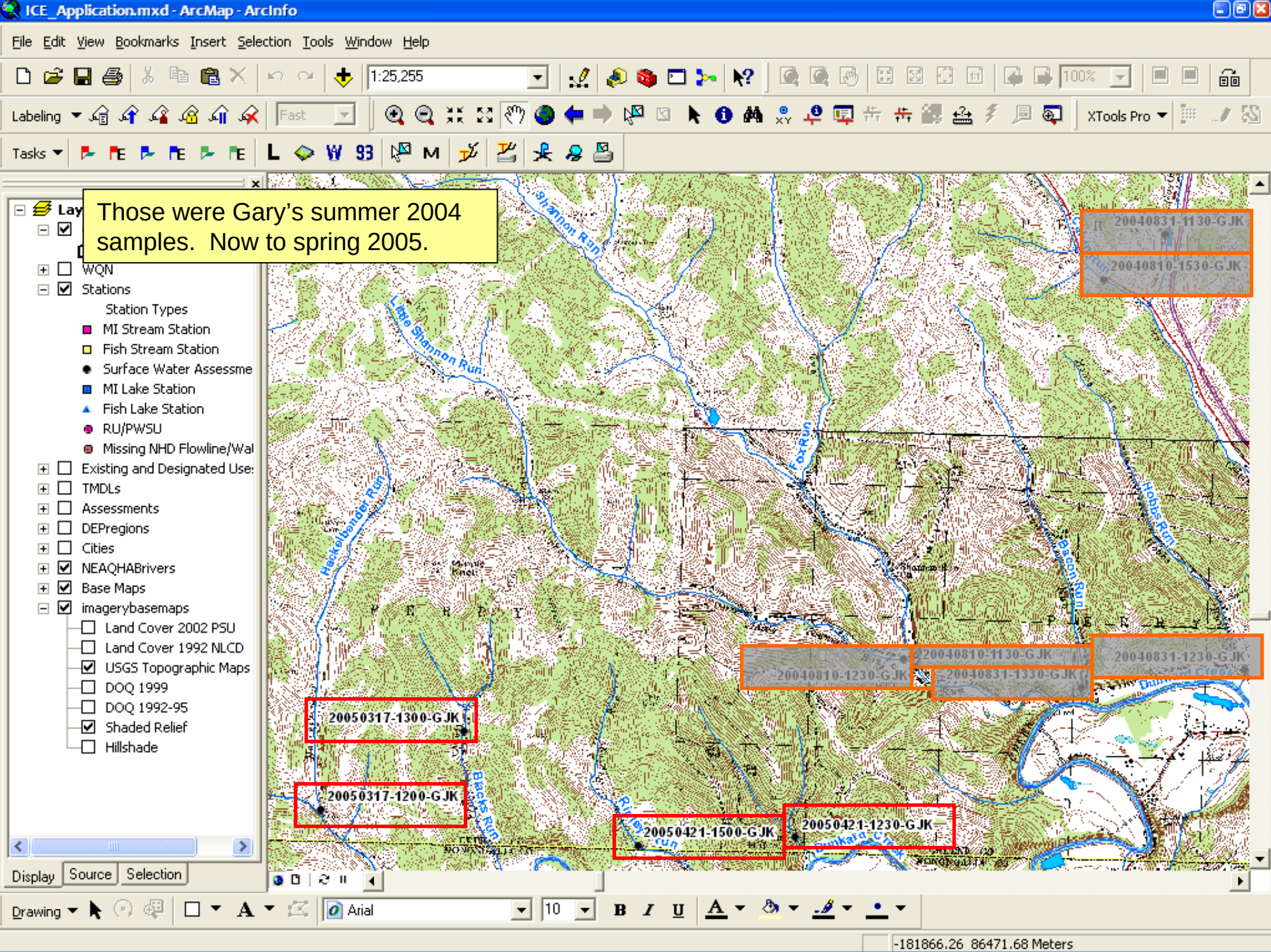
Potable Water Supply

Recreation

TMDL Information (if any)

Sediment deposition low; channel flow low; riparian parameters low.

pH 8.3; Conductivity 322.


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
1:25,255
Labeling
Fast
XTools Pro
Tasks
Those were Gary's summer 2004 samples. Now to spring 2005.
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
Shannon Run
Little Shannon Run
Fox Run
Hackelbarger Run
Bacon Run
Hobbs Run
Blacks Run
20040831-1130-GJK
20040810-1530-GJK
20040810-1130-GJK
20040831-1230-GJK
20040810-1230-GJK
20040831-1330-GJK
20050317-1300-GJK
20050317-1200-GJK
20050421-1500-GJK
20050421-1230-GJK
Drawing
Arial
10
-181866.26 86471.68 Meters

Station ID 20050317-1200-GJK **Stream Name** Hackelbender Run (01192573)
Secondary Station ID
Survey ID 54367 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7233682 **Longitude** -80.1559383
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Blacksville
From Mount Morris PA take Big Shannon Run Road west to Little Shannon Run Road - Followthis road until left onto T808 to Hackelbender Run Road - Followthis road to Wilson Road intersection - Sampled upstream of culvert 25 feet.

Biology / Physical Habitat Comments
Periphyton on substrate
CIS up from station
Epeorus collected
School of minnows observed
15 total taxa
EPT taxa collected

Land Use Comments
Other - Road follows stream with gravel and paved sections.

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Common	10-24	3	SC
Leuctridae	Rare	<3	0	SH
Capniidae	Present	3-9	3	SH
Perlodidae	Common	10-24	2	PR
Chloroperlidae	Present	3-9	0	PR
Nigronia	Rare	<3	2	PR
Philopotamidae	Abundant	25-100	3	FC
Hydropsychidae	Common	10-24	5	FC
Uenoidae	Present	3-9	3	SC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Abundant	25-100	6	
Athericidae	Rare	<3	2	PR
Tipulidae	Rare	<3	4	SH
Turbellaria	Rare	<3	9	

March 17, 2005.
Looks decent to me.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	15	68.2

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

File Edit View Tools Window Help Adobe PDF — Type a question for help

95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		Y
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	13	9. Condition of Banks	14
2. Epifaunal Substrate	16	6. Sediment Deposition	11	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	11
4. Velocity/Depth Regime	14	8. Channel Flow Status	16	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 55 Riparian Score (9. + 10. + 12.) = 40 Total Score = 164

Field Measurements

Lab samples

Temperature (°C)	7.9	Dissolved Oxygen (mg/L)	13.3	Flow (CFS)	
pH	8.1	Alkalinity (mg/L as CaCO3)		Conductivity	241

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20050317-1200-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Sediment deposition, embeddedness and riparian parameters a bit low; suboptimal elsewise.

pH 8.1; Conductivity 241.

Station ID 20050317-1300-GJK **Stream Name** Blacks Run (01536064)
Secondary Station ID
Survey ID 54369 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7289227 **Longitude** -80.1435427
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Blacksville
From Mount Morris PA take Big Shannon Run Road to Little Shannon Run Road - Follow it to left onto T808 then another quick left onto Blacks Run Road - Sampled downstream of farm house (white) on hillside (left side) - 1000 feet pass house.

Biology / Physical Habitat Comments
Sections of stream open
Salamander 1 collected
Epeorus collected
EPT taxa collected
9 total taxa

Land Use Comments
Other - Road follows stream with paved and gravel sections

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Ameletidae	Present	3-9	0	CG
Heptageniidae	Abundant	25-100	3	SC
Ephemerellidae	Present	3-9	2	CG
Perlodidae	Common	10-24	2	PR
Chloroperlidae	Present	3-9	0	PR
Hydropsychidae	Present	3-9	5	FC
Rhyacophilidae	Present	3-9	1	SC
Tipulidae	Present	3-9	4	SH
Cambaridae	Rare	<3	6	CG

March 17, 2005.
Looks decent to me.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	6	54.5
Beck's Index (version 3)	10	71.4
Hilsenhoff Biotic Index	2.54	100.7
Shannon Diversitiy	1.71	64.6
	SSWAP IBI	66.3

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	14	5. Channel Alteration	15	9. Condition of Banks	13
2. Epifaunal Substrate	16	6. Sediment Deposition	15	10. Bank Vegetation	14
3. Embeddedness	14	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	14
4. Velocity/Depth Regime	10	8. Channel Flow Status	16	12. Riparian Zone Width	10

Instream Score (1. + 2. + 3. + 6.) = 59 Riparian Score (9. + 10. + 12.) = 37 Total Score = 167

Field Measurements

Lab samples

Temperature (°C)	8.8	Dissolved Oxygen (mg/L)	12.3	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	151

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20050317-1300-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Velocity/depth regimes and riparian width scored 10; suboptimal elsewise.

pH 8.0; Conductivity 151.

Station ID 20050421-1230-GJK **Stream Name** Dunkard Creek (Unamed Trib 99419282 To)
Secondary Station ID
Survey ID 54215 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7222230 **Longitude** -80.1140051
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Osage
From Mount Morris take T808 east to Buckeye Road and followthis road to historical park on right - At park walk trail along Dunkard Creek to UNT - Sampled 200 feet upstream of UNT.

Biology / Physical Habitat Comments
Heptageniidae - Epeorus genus only in family
11 total taxa collected
Epeorus dominant family
EPT taxa collected

Land Use Comments
Other - Gas wells
95 % forested

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Ameletidae	Present	3-9	0	CG
Heptageniidae	Abundant	25-100	3	SC
Ephemerellidae	Common	10-24	2	CG
Nemouridae	Present	3-9	2	SH
Perlodidae	Common	10-24	2	PR
Chloroperlidae	Common	10-24	0	PR
Hydropsychidae	Present	3-9	5	FC
Rhyacophilidae	Present	3-9	1	SC
Tipulidae	Present	3-9	4	SH
Oligochaeta	Rare	<3	10	CG
Cambaridae	Rare	<3	6	CG

April 21, 2005.
Good.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	7	63.6
Beck's Index (version 3)	11	78.6
Hilsenhoff Biotic Index	2.32	103.7
Shannon Diversitiy	1.97	74.6
	SSWAP IBI	73.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	17	9. Condition of Banks	15
2. Epifaunal Substrate	11	6. Sediment Deposition	14	10. Bank Vegetation	15
3. Embeddedness	14	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	18
4. Velocity/Depth Regime	15	8. Channel Flow Status	15	12. Riparian Zone Width	18

Instream Score (1. + 2. + 3. + 6.) = 55 Riparian Score (9. + 10. + 12.) = 48 Total Score = 184

Field Measurements

Lab samples

Temperature (°C)	11.2	Dissolved Oxygen (mg/L)	10.4	Flow (CFS)	
pH	7.9	Alkalinity (mg/L as CaCO3)		Conductivity	232

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20050421-1230-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Epifaunal substrate scored 11; otherwise optimal to suboptimal habitat.

pH 7.9; Conductivity 232.

Station ID 20050421-1500-GJK **Stream Name** Ripleys Run (01545759)
Secondary Station ID
Survey ID 54219 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7214347 **Longitude** -80.1278958
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Blacksville
From Mount Morris take T808 east to Buckeye Road and pass historical park on right and turn onto Ripleys Run Road (gravel) - Cross State Line next to logging area - Sampled stream close to road.

Biology / Physical Habitat Comments
3 salamanders collected
Silvaculture past event in area
Epeorus collected
9 total taxa collected
EP taxa collected

Land Use Comments
Other - Gas wells
95% forested

Impairment Status Comments
Not Impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Heptageniidae	Abundant	25-100	3	SC
Ephemerellidae	Common	10-24	2	CG
Nemouridae	Present	3-9	2	SH
Leuctridae	Present	3-9	0	SH
Perlodidae	Common	10-24	2	PR
Chloroperlidae	Common	10-24	0	PR
Hydropsychidae	Present	3-9	5	FC
Tipulidae	Present	3-9	4	SH
Cambaridae	Rare	<3	6	CG

April 21, 2005.
Okay – low Plecoptera diversity.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	6	54.5
Beck's Index (version 3)	9	64.3
Hilsenhoff Biotic Index	2.26	104.4
Shannon Diversitiy	1.83	69.2
	SSWAP IBI	65.8

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

File Edit View Tools Window Help Adobe PDF — Type a question for help

95% Close Setup

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	11	5. Channel Alteration	11	9. Condition of Banks	15
2. Epifaunal Substrate	15	6. Sediment Deposition	9	10. Bank Vegetation	15
3. Embeddedness	11	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	12
4. Velocity/Depth Regime	10	8. Channel Flow Status	16	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 46 Riparian Score (9. + 10. + 12.) = 41 Total Score = 152

Field Measurements

Lab samples

Temperature (°C)	12.4	Dissolved Oxygen (mg/L)	11.6	Flow (CFS)	
pH	8.3	Alkalinity (mg/L as CaCO3)		Conductivity	347

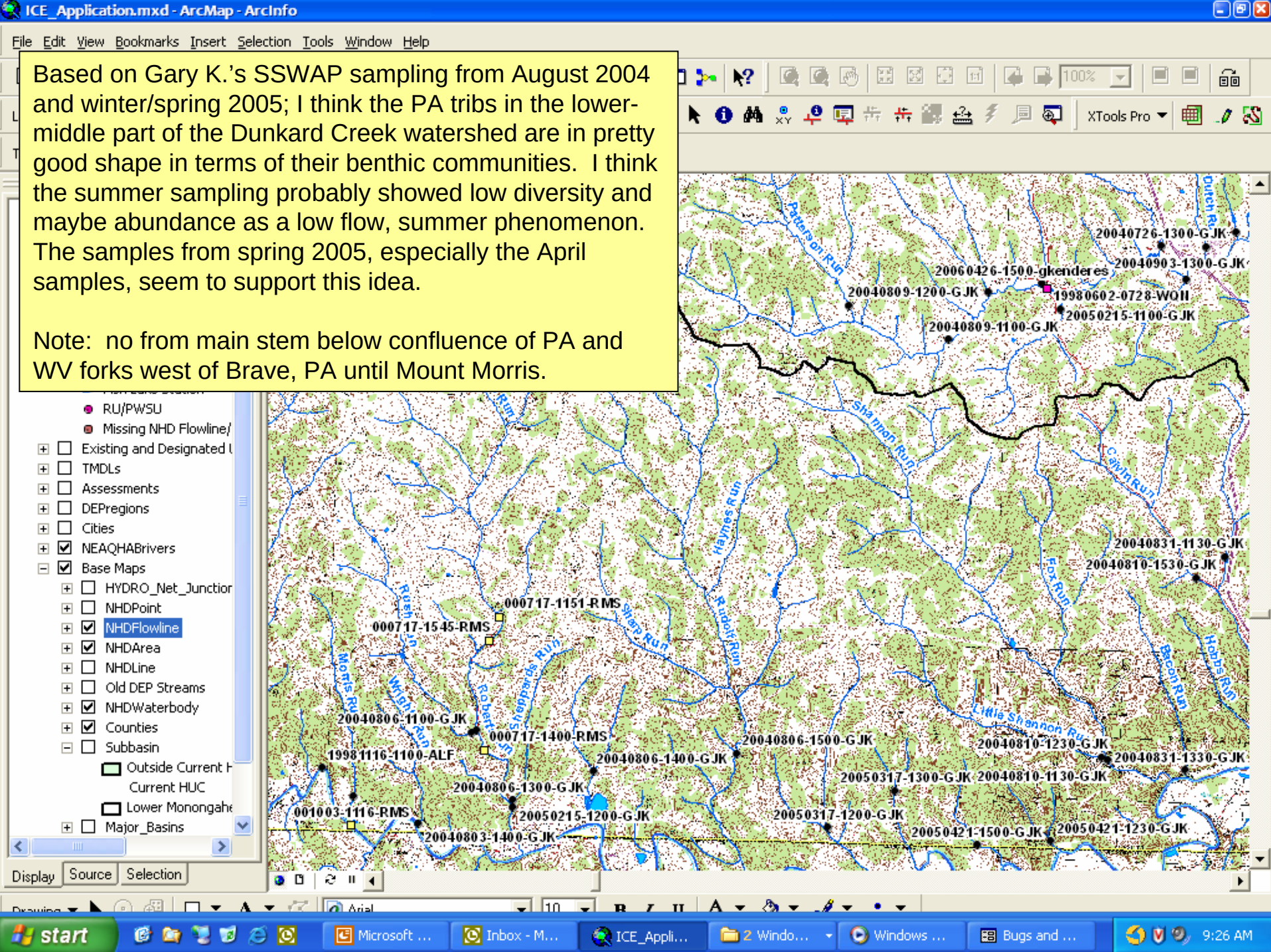
Use Assessment Status for Stream Reach

Aquatic Life	Attaining (20050421-1500-gkenderes)	
Fish Consumption		
Potable Water Supply		
Recreation		

Habitat suboptimal / marginal.

pH 8.3; Conductivity 347.

TMDL Information


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Based on Gary K.'s SSWAP sampling from August 2004 and winter/spring 2005; I think the PA tribs in the lower-middle part of the Dunkard Creek watershed are in pretty good shape in terms of their benthic communities. I think the summer sampling probably showed low diversity and maybe abundance as a low flow, summer phenomenon. The samples from spring 2005, especially the April samples, seem to support this idea.
Note: no from main stem below confluence of PA and WV forks west of Brave, PA until Mount Morris.
RU/PWSU
Missing NHD Flowline/
Existing and Designated
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
HYDRO_Net_Junctior
NHDPoint
NHDFlowline
NHDArea
NHDLine
Old DEP Streams
NHDWaterbody
Counties
Subbasin
Outside Current H
Current HUC
Lower Monongahe
Major_Basins
Display Source Selection
XTools Pro
20040726-1300-GJK
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Pattersons Run
Dutch Run
Shannon Run
Cavin Run
Haynes Run
Fox Run
Rudolf Run
Bacon Run
Hobbs Run
Little Shannon Run
Rush Run
Morris Run
Wright Run
Robert Run
Sheppards Run
Sikes Run
000717-1151-RMS
000717-1545-RMS
000717-1400-RMS
20040806-1100-GJK
19981116-1100-ALF
20040806-1400-GJK
20040806-1500-GJK
20040806-1300-GJK
001003-1116-RMS
20050215-1200-GJK
20040803-1400-GJK
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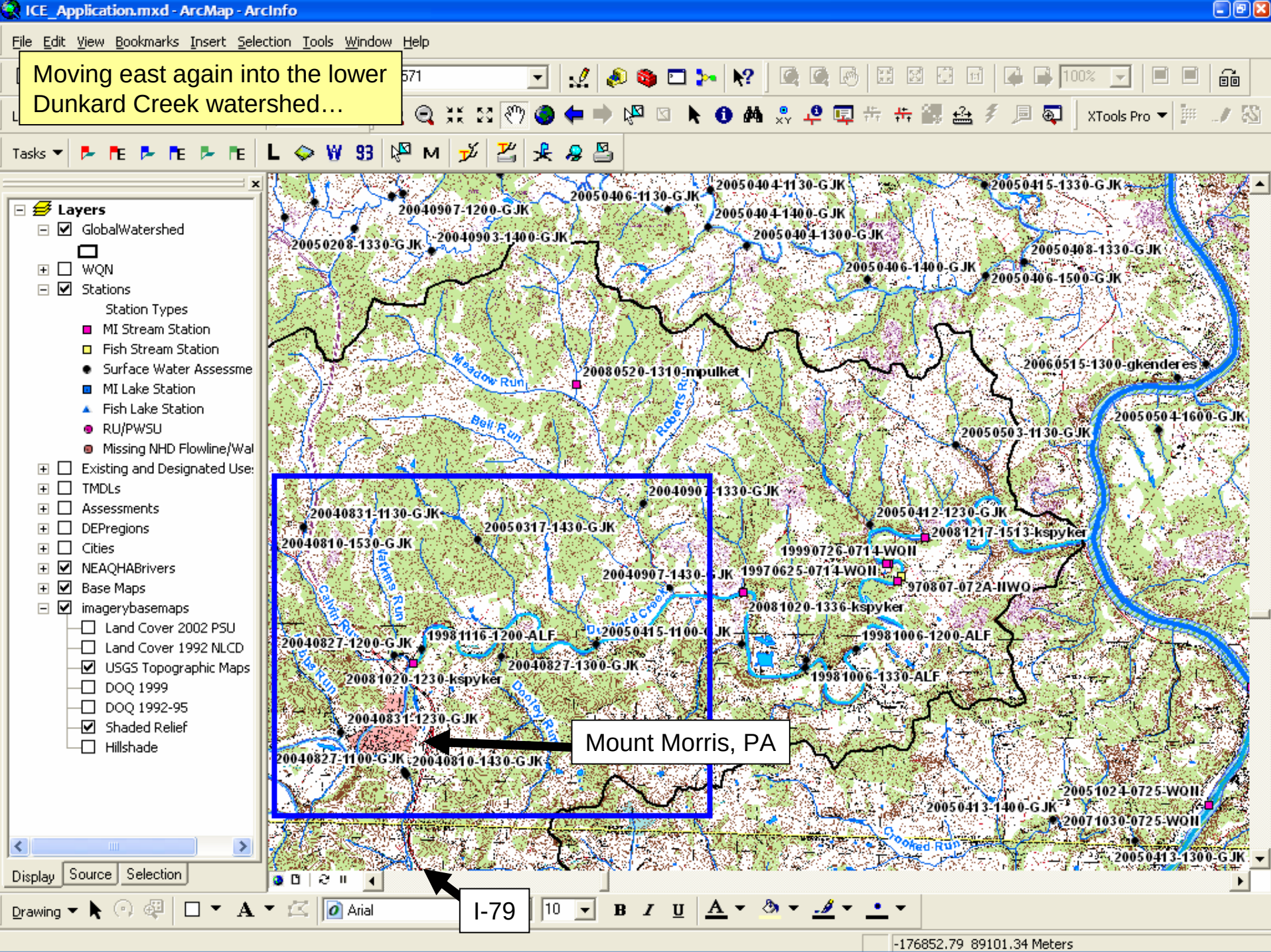
ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Moving east again into the lower Dunkard Creek watershed…
XTools Pro
Tasks
Layers
GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
20040907-1200-GJK
20050404-1130-GJK
20050406-1130-GJK
20050415-1330-GJK
20050404-1400-GJK
20050208-1330-GJK
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Meadow Run
Bell Run
Roberts Run
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19990726-0714-WQN
19970625-0714-WQN
970807-072A-NWQ
20081020-1336-kspyker
Watkins Run
Calvin Run
Dunkard Creek
19981116-1200-ALF
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20050415-1100-GJK
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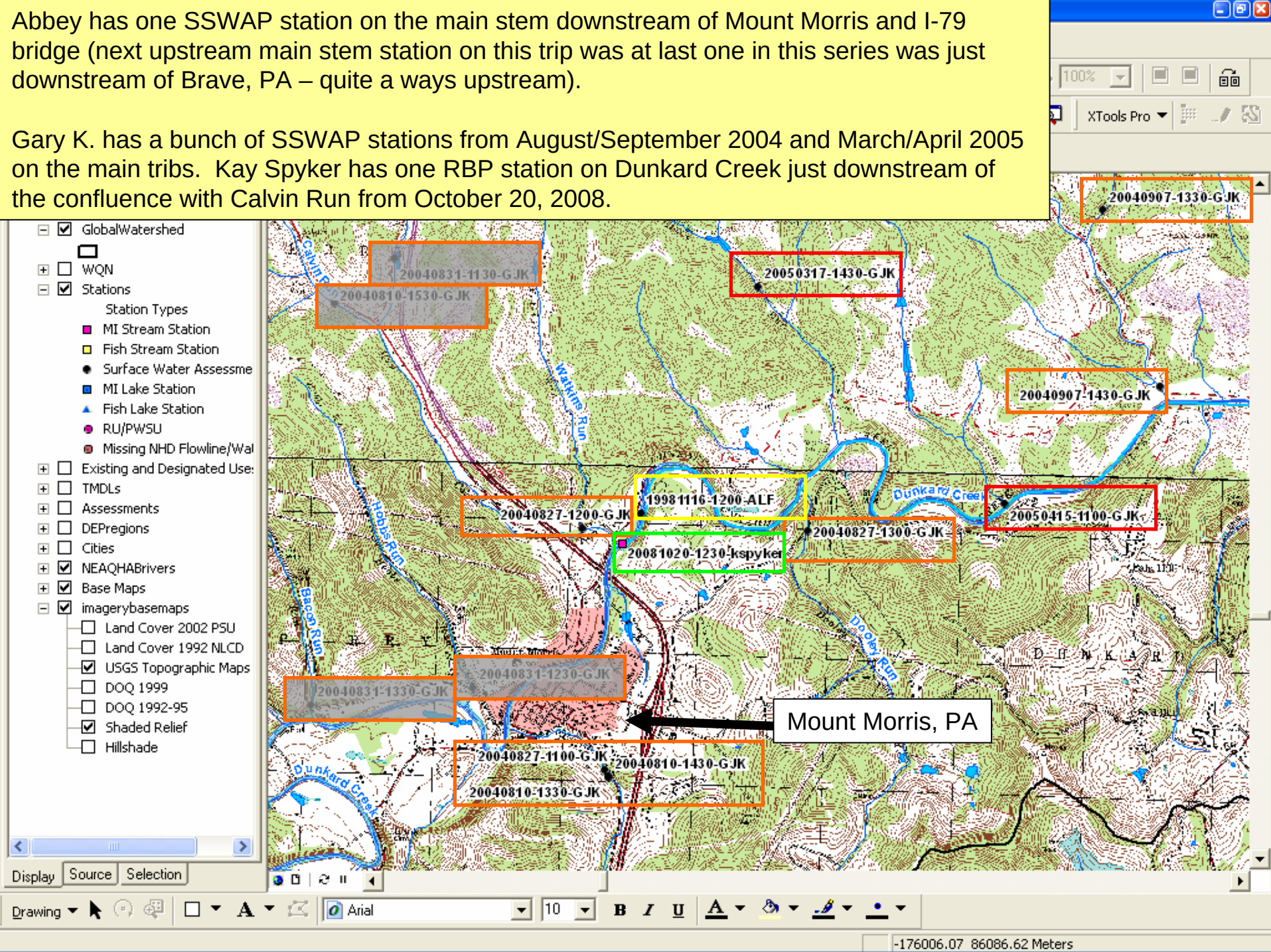
20081020-1230-kspyker
19981006-1330-ALF
Dooley Run
20040831-1230-GJK
Mount Morris, PA
20040827-1100-GJK
20040810-1430-GJK
20051024-0725-WQN
20050413-1400-GJK
20071030-0725-WQN
Crooked Run
20050413-1300-GJK
I-79
Drawing
Arial
10
-176852.79 89101.34 Meters

Abbey has one SSWAP station on the main stem downstream of Mount Morris and I-79 bridge (next upstream main stem station on this trip was at last one in this series was just downstream of Brave, PA – quite a ways upstream).

Gary K. has a bunch of SSWAP stations from August/September 2004 and March/April 2005 on the main tribs. Kay Spyker has one RBP station on Dunkard Creek just downstream of the confluence with Calvin Run from October 20, 2008.



Station ID 19981116-1200-ALF **Stream Name** Dunkard Creek (01213619)
Secondary Station ID
Survey ID 43277 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7467665 **Longitude** -80.0599164
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DS OF I79 AND STP AS CALVIN RUN ENTERS DUNKARD

Biology / Physical Habitat Comments
RAINBOW DARTERS, FANTAIL DARTERS
CHIMARRA- MOST ABUNDANT

Land Use Comments
FORESTED-SCATTERED RESIDENCES

Impairment Status Comments
NOT IMPAIRED

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Present	3-9	3	CG
Tricorythidae	Abundant	25-100	4	CG
Coenagrionidae	Present	3-9	8	PR
Taeniopterygidae	Abundant	25-100	2	SH
Nigronia	Common	10-24	2	PR
Philopotamidae	Abundant	25-100	3	FC
Hydropsychidae	Common	10-24	5	FC
Limnephilidae	Rare	<3	4	SH
Hydrophilidae	Rare	<3	5	PR
Chironomidae(other)	Common	10-24	6	
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Sphaeriidae	Present	3-9	8	FC
Corbiculidae	Present	3-9	4	FC

November 16, 1998. Main stem. Doesn't look too bad for this size of a drainage area. Only two mayfly taxa; one stonefly taxa. Chimarra dominant.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	14	63.6
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	3.61	86.3
Shannon Diversitiy	2.19	82.8
	SSWAP IBI	59.9

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	13	5. Channel Alteration	16	9. Condition of Banks	16
2. Epifaunal Substrate	14	6. Sediment Deposition	13	10. Bank Vegetation	16
3. Embeddedness	12	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	14
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 52 Riparian Score (9. + 10. + 12.) = 47 Total Score = 172

Field Measurements

Lab samples

Temperature (°C)	8.4	Dissolved Oxygen (mg/L)	6.96	Flow (CFS)	
pH	7.22	Alkalinity (mg/L as CaCO3)		Conductivity	1099

Use Assessment Status for Stream Reach

Aquatic Life	Attaining (981116-1200-ALF)	
Fish Consumption	Impaired (20020111-1265-FIT) Source Unknown - Mercury	
Potable Water Supply		

Habitat suboptimal.

pH 7.22; Conductivity 1099!

Station ID 20040810-1330-GJK **Stream Name** Dunkard Creek (Unamed Trib 99419134 To)
Secondary Station ID
Survey ID 53960 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7285193 **Longitude** -80.0623254
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris take 19 south just out from town to bridge crossing - Sampled downstream of bridge 200 feet - Pulloff next to pump house

Biology / Physical Habitat Comments
Taxa (12)
Isonychiidae common

Land Use Comments
Other; Roads follow stream (interstate 79)
Streams upper watershed is in WV

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Common	10-24	6	CG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Present	3-9	3	SC
Leuctridae	Present	3-9	0	SH
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Common	10-24	4	SC
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Simuliidae	Present	3-9	6	FC
Corbiculidae	Rare	<3	4	FC
Cambaridae	Rare	<3	6	CG

August 2004 – Gary K. UNT. Okay summer SSWAP.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	12	54.5
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	3.94	81.7
Shannon Diversitiy	2.23	84.5
	SSWAP IBI	57.1

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	15	9. Condition of Banks	16
2. Epifaunal Substrate	16	6. Sediment Deposition	12	10. Bank Vegetation	16
3. Embeddedness	14	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	15	8. Channel Flow Status	14	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 58 Riparian Score (9. + 10. + 12.) = 43 Total Score = 174

Field Measurements

Lab samples

Temperature (°C)	19.3	Dissolved Oxygen (mg/L)	10.2	Flow (CFS)	
pH	8.1	Alkalinity (mg/L as CaCO3)		Conductivity	589

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040827-1100-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Sediment deposition and riparian width a little low.

pH 8.1; Conductivity 589…

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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Station ID 20040810-1430-GJK **Stream Name** Dunkard Creek (Unamed Trib 99419134 To)
Secondary Station ID
Survey ID 53961 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7284371 **Longitude** -80.0622583
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris PA take 19 south just out of town and pulloff at pump station next to stream - Sampled upstream from bridge crossing 50 feet

Biology / Physical Habitat Comments
Only Tipulidae collected Rare

Land Use Comments
Other; Roads surround stream (int 79)

Impairment Status Comments
Impaired biology - AMD - metals (orange substrate)

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Tipulidae	Rare	<3	4	SH

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	1	4.5
EPT Richness (PTV 0 - 4)	0	0.0
Beck's Index (version 3)	0	0.0
Hilsenhoff Biotic Index	4.00	81.0
Shannon Diversitiy	0.00	0.0
	SSWAP IBI	17.1

I'm not quite sure what's going on here; seems to be located on the upstream side of the same bridge as the 1330 station, but only rare Tipulids? Seems strange to me…

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		Y
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	11	5. Channel Alteration	15	9. Condition of Banks	13
2. Epifaunal Substrate	15	6. Sediment Deposition	15	10. Bank Vegetation	14
3. Embeddedness	11	7. Frequency of Riffles	15	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	13	8. Channel Flow Status	15	12. Riparian Zone Width	17

Instream Score (1. + 2. + 3. + 6.) = 52 Riparian Score (9. + 10. + 12.) = 44 Total Score = 170

Field Measurements

Lab samples

Temperature (°C)	17.5	Dissolved Oxygen (mg/L)	9.9	Flow (CFS)	
pH	7.9	Alkalinity (mg/L as CaCO3)		Conductivity	832

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040827-1100-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Instream cover and embeddedness low.

pH 7.9; Conductivity 832! (589 at 1330 station)

Station ID 20040827-1100-GJK **Stream Name** Dunkard Creek (Unamed Trib 99419134 To)
Secondary Station ID
Survey ID 54074 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7289560 **Longitude** -80.0626138
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris take 19 south just out of town to bridge crossing - Sampled downstream of bridge 200 feet - Pulloff next to pump house

Biology / Physical Habitat Comments
Collected (1) darter
AMD in UNT of Dunkard Creek local impact

Land Use Comments
Other; Roads follow stream (interstate 79)
Stream watershed in WV

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Common	10-24	6	CG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Present	3-9	3	SC
Corydalus	Rare	<3	4	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Common	10-24	4	SC
Chironomidae(other)	Present	3-9	6	
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Cambaridae	Present	3-9	6	CG

Sounds and looks like same location as 20040810-1330-GJK. Fairly similar sample; not bad for summer SSWAP. Based on comments, I think the 20040810-1430-GJK station was on a small trib/discharge.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	4.44	75.0
Shannon Diversitiy	2.20	83.2
	SSWAP IBI	48.5

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	15	9. Condition of Banks	16
2. Epifaunal Substrate	16	6. Sediment Deposition	11	10. Bank Vegetation	16
3. Embeddedness	15	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	14	8. Channel Flow Status	14	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 57 Riparian Score (9. + 10. + 12.) = 43 Total Score = 175

Field Measurements

Lab samples

Temperature (°C)	19.5	Dissolved Oxygen (mg/L)	9.5	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	538

Use Assessment Status for Stream Reach

	Designated Use	Existing Use
Aquatic Life	Attaining (20040827-1100-gkenderes)	
Fish Consumption		
Potable Water Supply		
Recreation		

TMDL Information (if any)

Very similar habitat and chemistry to 20040810-1330-GJK.

Station ID 20040827-1200-GJK **Stream Name** Watkins Run (01209350)
Secondary Station ID
Survey ID 54076 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.745641 **Longitude** -80.0651181
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
From Mt Morris take 19 north to Dooley Road and left onto Mechanic Road about <.25 miles - Pulloff and sampled stream 100 feet up from confluence with Calvin Run

Biology / Physical Habitat Comments
Heptageniidae abundant and Leuctridae present

Land Use Comments

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Heptageniidae	Abundant	25-100	3	SC
Cordulegastridae	Rare	<3	3	PR
Leuctridae	Present	3-9	0	SH
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Tipulidae	Rare	<3	4	SH
Cambaridae	Rare	<3	6	CG

Low diversity, but EPT at least present, Heptageniids abundant; not terrible, especially for summer SSWAP.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	7	31.8
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	3.03	94.1
Shannon Diversitiy	1.17	44.3
	SSWAP IBI	43.8

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	Y	
17b. Special conditions (impaired)		N

17c. Special conditons description

Heptageniidae abundant and Leuctridae present

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	12	5. Channel Alteration	15	9. Condition of Banks	15
2. Epifaunal Substrate	15	6. Sediment Deposition	10	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	10	8. Channel Flow Status	14	12. Riparian Zone Width	13

Instream Score (1. + 2. + 3. + 6.) = 50 Riparian Score (9. + 10. + 12.) = 43 Total Score = 164

Field Measurements

Lab samples

Temperature (°C)	20.7	Dissolved Oxygen (mg/L)	8.3	Flow (CFS)	
pH	8	Alkalinity (mg/L as CaCO3)		Conductivity	476

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040827-1200-GJK)

Fish Consumption

Potable Water Supply

Recreation

Habitat middling.

pH 8.0; Conductivity 476.

Station ID 20040827-1300-GJK **Stream Name** Dooley Run (01538269)
Secondary Station ID
Survey ID 54078 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7457907 **Longitude** -80.0449792
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Osage
Mt Morris take 19 north to Dooley Road to right onto Ellsworth Road to bridge crossing Dooley Run - Sampled 100 feet upstream of bridge

Biology / Physical Habitat Comments
Low flow conditions
Collected only one Chloroperlidae in two kick screens

Land Use Comments
Other; Past silverculture in watershed and AMD reported in 1996 survey

Impairment Status Comments
Impaired biology - Silverculture - siltation

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Chloroperlidae	Rare	<3	0	PR
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Rare	<3	6	
Tipulidae	Present	3-9	4	SH
Turbellaria	Rare	<3	9	
Gammaridae	Present	3-9	4	CG
Cambaridae	Rare	<3	6	CG
Asellidae	Present	3-9	8	CG

Low EPT diversity; abundance kinda low. Summer SSWAP could be worse. Low flow. Gary impaired this sample.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	10	45.5
EPT Richness (PTV 0 - 4)	1	9.1
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	5.18	65.0
Shannon Diversitiy	2.19	83.0
	SSWAP IBI	44.8

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		Y
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	15	9. Condition of Banks	13
2. Epifaunal Substrate	16	6. Sediment Deposition	10	10. Bank Vegetation	14
3. Embeddedness	14	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	10	8. Channel Flow Status	13	12. Riparian Zone Width	14

Instream Score (1. + 2. + 3. + 6.) = 55 Riparian Score (9. + 10. + 12.) = 41 Total Score = 166

Field Measurements

Lab samples

Temperature (°C)	18.2	Dissolved Oxygen (mg/L)	6.5	Flow (CFS)	
pH	7.9	Alkalinity (mg/L as CaCO3)		Conductivity	450

Use Assessment Status for Stream Reach

Aquatic Life Impaired (4929)

Abandoned Mine Drainage - Metals

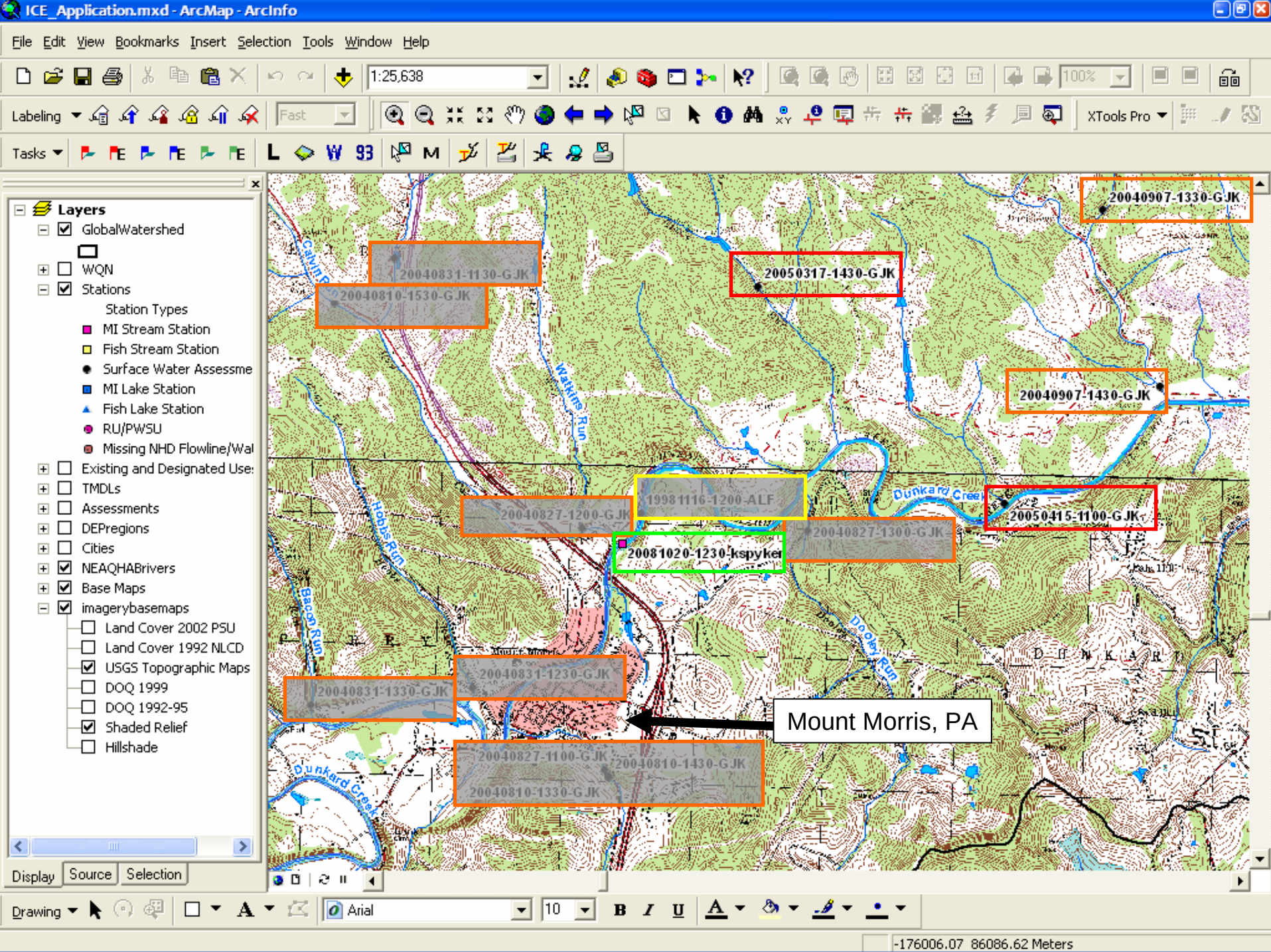
Fish Consumption

Potable Water Supply

Recreation

Habitat suboptimal-ish; velocity/depth regime and sediment deposition scored 10.

pH 7.9; Conductivity 450.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Stations
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Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
20040907-1330-GJK
20040831-1130-GJK
20040810-1530-GJK
20050317-1430-GJK
20040907-1430-GJK
Watkins Run
19981116-1200-ALF
20040827-1200-GJK
20081020-1230-kspyker
20040827-1300-GJK
20050415-1100-GJK
Hobbs Run
Bacon Run
Dooley Run
20040831-1230-GJK
20040831-1330-GJK
Mount Morris, PA
20040827-1100-GJK
20040810-1430-GJK
20040810-1330-GJK
Dunkard Creek
Drawing
Arial
10
-176006.07 86086.62 Meters

Station ID 20040907-1330-GJK **Stream Name** Roberts Run (01185211)
Secondary Station ID
Survey ID 54119 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.768496 **Longitude** -80.0191264
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments
Quad - Garards Fort
From Davistown take State Highway 2019 south to T713 crossing - Head up T713 .25 miles and sampled stream downstream of road bridge crossing 500 feet

Biology / Physical Habitat Comments
Collected (12) taxa
Collected (2) Blacknose Dace
Collected (1) salamander
Perlodidae common and dominant taxa

Land Use Comments
Other; Road follows stream
Game Lands # 223 in upper watershed

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Present	3-9	3	SC
Leuctridae	Present	3-9	0	SH
Perlidae	Rare	<3	3	PR
Perlodidae	Common	10-24	2	PR
Chloroperlidae	Rare	<3	0	PR
Hydropsychidae	Present	3-9	5	FC
Psephenidae	Present	3-9	4	SC
Chironomidae(other)	Rare	<3	6	
Gammaridae	Present	3-9	4	CG
Cambaridae	Rare	<3	6	CG

September 7, 2004. Low caddisfly diversity; decent mayflies and stoneflies. Abundance maybe a little low.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	7	50.0
Hilsenhoff Biotic Index	3.16	92.4
Shannon Diversitiy	2.13	80.6
	SSWAP IBI	63.7

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	15	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	13	10. Bank Vegetation	15
3. Embeddedness	14	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	14
4. Velocity/Depth Regime	14	8. Channel Flow Status	10	12. Riparian Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 58 Riparian Score (9. + 10. + 12.) = 42 Total Score = 169

Field Measurements

Lab samples

Temperature (°C)	17.4	Dissolved Oxygen (mg/L)	9.2	Flow (CFS)	
pH	8.4	Alkalinity (mg/L as CaCO3)		Conductivity	485

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040907-1330-GJK)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Habitat high side of suboptimal for the most part. Apparently still pretty low flow.

pH 8.4! Conductivity 485.

Station ID 20040907-1430-GJK **Stream Name** MeadowRun (01180828)
Secondary Station ID
Survey ID 54122 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7563578 **Longitude** -80.0136648
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad - Garards Fort
From Davistown take State Highway 2019 south to where stream meets Dunkard - Gated bridge over stream - Sampled 200 feet upstream from bridge

Biology / Physical Habitat Comments
Shiners observed in pools
Heptageniidae common and dominant taxa
Perlidae present

Land Use Comments
Other; Roads follow streams
Game Lands # 223 in watershed

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Isonychiidae	Present	3-9	3	CG
Heptageniidae	Common	10-24	3	SC
Perlidae	Present	3-9	3	PR
Nigronia	Present	3-9	2	PR
Philopotamidae	Present	3-9	3	FC
Hydropsychidae	Present	3-9	5	FC
Chironomidae(other)	Present	3-9	6	
Tipulidae	Present	3-9	4	SH
Gammaridae	Present	3-9	4	CG
Cambaridae	Rare	<3	6	CG

September 7, 2004. Decent. Maybe a bit low abundance.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	3.79	83.8
Shannon Diversitiy	2.25	85.3
	SSWAP IBI	52.5

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	14	5. Channel Alteration	16	9. Condition of Banks	15
2. Epifaunal Substrate	16	6. Sediment Deposition	14	10. Bank Vegetation	16
3. Embeddedness	14	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	15	8. Channel Flow Status	15	12. Riparian Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 58 Riparian Score (9. + 10. + 12.) = 43 Total Score = 179

Field Measurements

Lab samples

Temperature (°C)	20.7	Dissolved Oxygen (mg/L)	9.2	Flow (CFS)	
pH	8.3	Alkalinity (mg/L as CaCO3)		Conductivity	586

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20040907-1430-GJK)

Fish Consumption

Potable Water Supply

Recreation

Habitat high side of suboptimal for the most part. Flow better here.

pH 8.3. Conductivity 586.

TMDL Information (if any)

Station ID 20050317-1430-GJK **Stream Name** Dunkard Creek (Unamed Trib 99418872 To)
Secondary Station ID
Survey ID 54370 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7626431 **Longitude** -80.0498977
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
Quad Garards Fort
From Fairchance PA take Davistown Road to intersection of T628 on left (gravel road) - Followroad 1/4 mile to where posted signs stop along stream - Sampled at that location straight into stream from road.

Biology / Physical Habitat Comments
Algae on large rocks
EPT taxa collected
11 total taxa

Land Use Comments
Other - Road follows stream (gravel road)

Impairment Status Comments
Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Abundant	25-100	3	SC
Perlidae	Present	3-9	3	PR
Perlodidae	Common	10-24	2	PR
Nigronia	Rare	<3	2	PR
Philopotamidae	Common	10-24	3	FC
Hydropsychidae	Common	10-24	5	FC
Rhyacophilidae	Rare	<3	1	SC
Uenoidae	Present	3-9	3	SC
Chironomidae(other)	Common	10-24	6	
Tipulidae	Present	3-9	4	SH

March 2005.
Decent.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	6	54.5
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	3.62	86.1
Shannon Diversitiy	2.02	76.4
	SSWAP IBI	59.1

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	Y	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditors description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	16	9. Condition of Banks	12
2. Epifaunal Substrate	17	6. Sediment Deposition	11	10. Bank Vegetation	13
3. Embeddedness	13	7. Frequency of Riffles	17	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	10	8. Channel Flow Status	16	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 56 Riparian Score (9. + 10. + 12.) = 41 Total Score = 172

Field Measurements

Lab samples

Temperature (°C)	8.1	Dissolved Oxygen (mg/L)	12.3	Flow (CFS)	
pH	8.1	Alkalinity (mg/L as CaCO3)		Conductivity	203

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20050317-1430-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Velocity/depth regime, sediment deposition, and bank parameters scored low suboptimal.

pH 8.1. Conductivity 203.

Station ID 20050415-1100-GJK **Stream Name** Dunkard Creek (Unamed Trib 134839739 To)
Secondary Station ID
Survey ID 54427 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7479849 **Longitude** -80.0273709
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments

Quad Osage
From Mount Morris PA take Route 19 north 1/4 mile to HWY 2006 - Travel 1/2 mile to T318 toT341 - FollowT341 3 miles to left onto unnamed road which dead ends. - Park close to Dunkard Creek and walk upstream 300 feet to UNT (left descending bank) - Sampled UNT 100 feet upstream from mouth.

Biology / Physical Habitat Comments

Algae present in riffle locations
5 rainbowdarters collected
Empoundments in headwater (3)
5 total taxa collected
Chironomidae dominant family

Land Use Comments

Impairment Status Comments

Impaired biology - Grazing related - siltation.

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Nemouridae	Rare	<3	2	SH
Hydropsychidae	Rare	<3	5	FC
Chironomidae(other)	Abundant	25-100	6	
Tipulidae	Rare	<3	4	SH
Asellidae	Rare	<3	8	CG

April 2005.
Something's going on – Gary impaired this for grazing related siltation.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	5	22.7
EPT Richness (PTV 0 - 4)	1	9.1
Beck's Index (version 3)	1	7.1
Hilsenhoff Biotic Index	5.83	56.3
Shannon Diversitiy	0.59	22.4
	SSWAP IBI	23.5

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		Y
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		Y
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	10	5. Channel Alteration	16	9. Condition of Banks	13
2. Epifaunal Substrate	15	6. Sediment Deposition	10	10. Bank Vegetation	13
3. Embeddedness	10	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	13	8. Channel Flow Status	16	12. Riparian Zone Width	18

Instream Score (1. + 2. + 3. + 6.) = 46 Riparian Score (9. + 10. + 12.) = 44 Total Score = 166

Field Measurements

Lab samples

Temperature (°C)	10.7	Dissolved Oxygen (mg/L)	12.7	Flow (CFS)	
pH	8.2	Alkalinity (mg/L as CaCO3)		Conductivity	324

Use Assessment Status for Stream Reach

Aquatic Life Impaired (20050415-1100-gkenderes)

Grazing Related Agric - Siltation

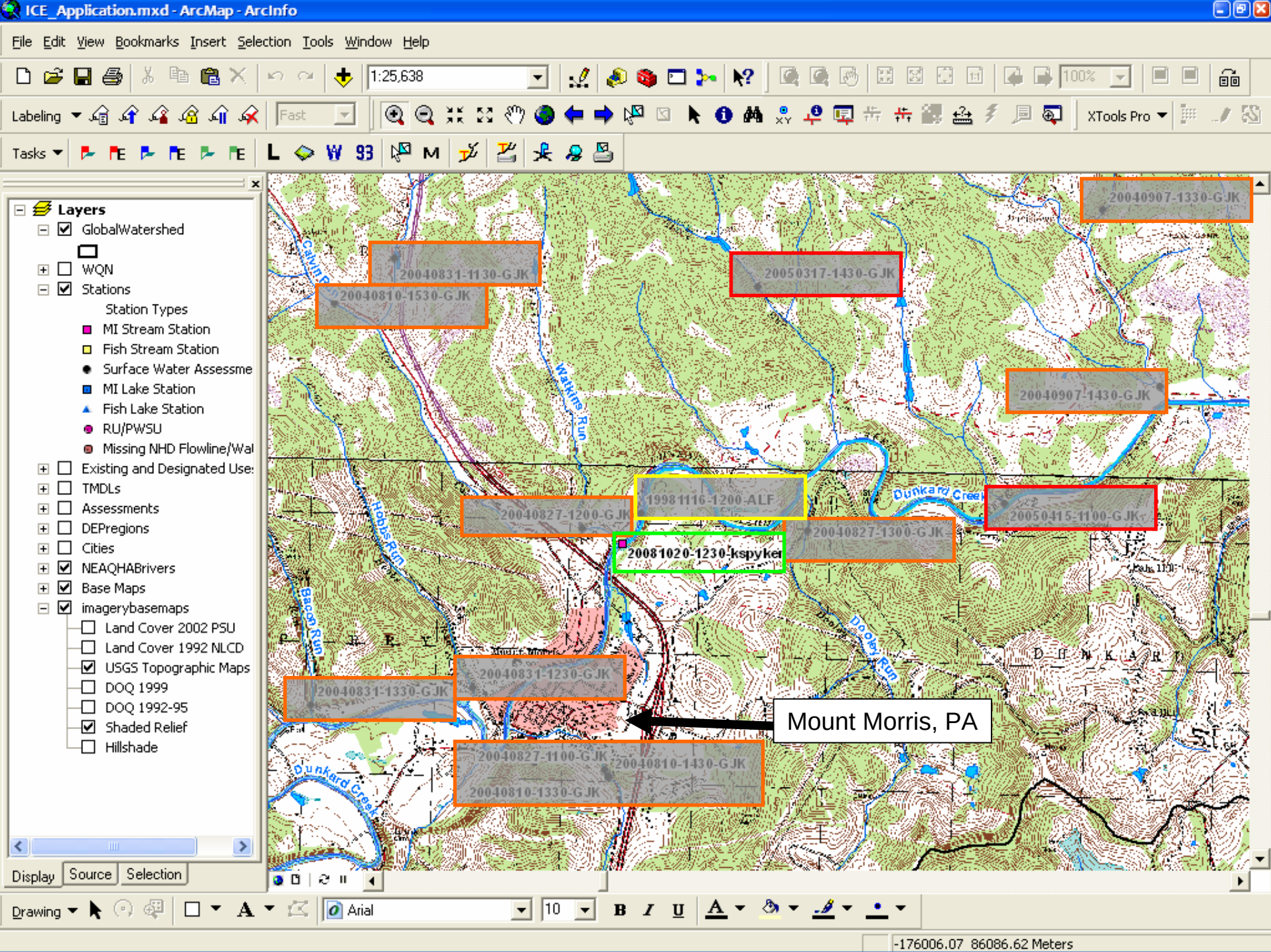
Fish Consumption

Potable Water Supply

Recreation

Instream cover, embeddedness, and sediment deposition scored 10. A few 13s also.

pH 8.2. Conductivity 324.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Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
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20040907-1330-GJK
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20050317-1430-GJK
20040907-1430-GJK
Watkins Run
19981116-1200-ALF
20040827-1200-GJK
20081020-1230-kspyker
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20050415-1100-GJK
Dunkard Creek
Hobbs Run
Bacon Run
Dooley Run
20040831-1230-GJK
20040831-1330-GJK
Mount Morris, PA
20040827-1100-GJK
20040810-1430-GJK
20040810-1330-GJK
Dunkard Creek
Drawing
Arial
10
-176006.07 86086.62 Meters

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

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Station ID 20081020-1230-kspyker **Stream Name** Dunkard Creek (01213619)
Secondary Station ID DC5
Survey ID 59019 **Sample Method** 6-Dframe Composite, 200 subsample
Collection Date 20081020 **Collection Time** 1230 **Latitude** 39.7446293 **Longitude** -80.0615809
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DC5--Dunkard Creek at Mt Morris□□□

Biology / Habitat Comments

Land Use Comments

Station Impairment Status Comments

Taxa List

grids from first pan: 5 | # grids from second pan: 0 | Subsample Size: 294

Taxa Name	Individuals	PTV	FFG	BCG Attribute (coldwater)	BCG Attribute (warmwater)
Isonychia	3	3	CG	3	3
Stenacron	1	4	SC	4	4
Stenonema	1	4	SC	4	4
Caenis	1	7	CG	5	5
Tricorythodes	56	4	CG	5	5
Taeniopteryx	35	2	SH	3	3
Corydalus	1	4	PR	4	4
Chimarra	1	4	FC	4	4
Polycentropus	1	6	FC	4	4
Cheumatopsyche	49	6	FC	5	5
Hydropsyche	2	5	FC	5	5
Leucotrichia	27	6	SC	4	4
Psephenus	2	4	SC	4	4
Dubiraphia	1	6	SC	4	4
Optioservus	7	4	SC	4	4
Stenelmis	14	5	SC	5	5
Ceratopogonidae	1	6	PR	4	4
Atherix	1	2	PR	3	3
Hemerodromia	2	6	PR	4	4
Tipula	1	4	SH	5	5
Hexatoma	2	2	PR	3	3
Chironomidae	82	6	CG	5	5
Oligochaeta	3	10	CG	5	5

any EV indicator taxa names are highlighted

Kay Spyker – October 2008 – freestone riffle/run RBP sample.

Dominated by tolerant/facultative taxa and individuals. Sub-sample 294. Taeniopteryx only stonefly taxa. I don't like it, even for a larger stream; although it doesn't look all that different from Abbey's sample close by taken 10 years earlier – I think it just emphasizes the tolerant/facultative dominance when taken to genus level.

Station ID 19981116-1200-ALF **Stream Name** Dunkard Creek (01213619)
Secondary Station ID
Survey ID 43277 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7467665 **Longitude** -80.0599164
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DS OF I79 AND STP AS CALVIN RUN ENTERS DUNKARD

Biology / Physical Habitat Comments
RAINBOW DARTERS, FANTAIL DARTERS
CHIMARRA- MOST ABUNDANT

Land Use Comments
FORESTED-SCATTERED RESIDENCES

Impairment Status Comments
NOT IMPAIRED

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Present	3-9	3	CG
Tricorythidae	Abundant	25-100	4	CG
Coenagrionidae	Present	3-9	8	PR
Taeniopterygidae	Abundant	25-100	2	SH
Nigronia	Common	10-24	2	PR
Philopotamidae	Abundant	25-100	3	FC
Hydropsychidae	Common	10-24	5	FC
Limnephilidae	Rare	<3	4	SH
Hydrophilidae	Rare	<3	5	PR
Chironomidae(other)	Common	10-24	6	
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Sphaeriidae	Present	3-9	8	FC
Corbiculidae	Present	3-9	4	FC

Abbey's November 16, 1998 SSWAP sample from 300 meters downstream of where Kay sampled in October 2008.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	14	63.6
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	3	21.4
Hilsenhoff Biotic Index	3.61	86.3
Shannon Diversitiy	2.19	82.8
	SSWAP IBI	59.9

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

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Metric Names	Raw Metric Values	Standardized Metric Values: Freestone Riffle-Run 6D200 2009 small	6D200 2009 large	6D200 2007	2D100	Multihabitat Pool-Glide	Limestone
Total Richness	23	69.7	69.7	65.7		74.2	124.3
Ephemeroptera Richness	5					83.3	
Trichoptera Richness	5					45.5	
EPT Richness	11			47.8	71.9	64.7	137.5
Trichoptera Richness (PTV 0-4)	1				27.8		
EPT Richness (PTV 0-4)	6	31.6	33.3				
Beck's Index (version 3)	3	7.9	10.0	7.7			
Beck's Index (version 4)	12				60.3	54.5	
FC + PR + SH Richness	11				94.8		
Hilsenhoff Biotic Index	4.97	62.1	67.1	61.2	74.7		80.0
% Inolerant Individuals (PTV 0-3)	13.9	16.5	21.0				53.0
% Intolerant Individuals (PTV 0-5)	43.2			46.7			
% Tolerant Individuals (PTV 7-10)	1.4						99.6
Shannon Diversity	2.10	73.4	74.2	72.5		86.4	109.4
IBI score		**43.5**	**45.9**	**50.3**	**65.9**	**68.1**	**86.5**

BCG Richness Ratio	0.21	% Ephemeroptera	21.1	% Baetis	0.0	% Chironomidae	27.9
BCG % Individuals Ratio	0.16	% Plecoptera	11.9	% Ephemerella	0.0	% Simuliidae	0.0
EV Indicator Taxa		% Trichoptera	27.2	% Dominant Taxon	27.9	% Prosimulium	0.0

Not impaired N — Biology impaired N — Habitat impaired N — Insufficient data Y

Rock pick influenced assessment N — Impact is localized N — Re-evaluate designated use N

Physical Habitat Assessment

Pool-Glide Assessment? Y

1. Instream Cover	6	5. Channel Alteration	15	9. Contition of Banks	13
2. Epifaunal Substrate	5	6. Sediment Deposition	8	10. Bank Vegetative Protection	11
3. Embeddedness	5	7. Frequency of Riffles	11	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regimes	10	8. Channel Flow Status	11	12. Riparian Vegetative Zone Width	14

Instream Score (1. + 2. + 3. + 6.) = 24 — Riparian Score (9. + 10. + 12.) = 38 — Total Score = 125

Field Measurements

Lab samples

Temperature (°C)	0	Dissolved Oxygen (mg/L)	0	Flow (CFS)	0
pH	0	Total Alkalinity (mg/L as CaCO3)	0	Conductivity (uS/cm)	0

Use Assessment Status for Stream Reach

Aquatic Life — Attaining (981116-1200-ALF)

Fish Consumption — Impaired (20020111-1265-FIT)
Source Unknown - Mercury

Beck's Index and % Intolerant really whack this sample.

Habitat evaluation for what it's worth.

No chemistry.

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	13	5. Channel Alteration	16	9. Condition of Banks	16
2. Epifaunal Substrate	14	6. Sediment Deposition	13	10. Bank Vegetation	16
3. Embeddedness	12	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	14
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	15

Instream Score (1. + 2. + 3. + 6.) = 52 Riparian Score (9. + 10. + 12.) = 47 Total Score = 172

Field Measurements

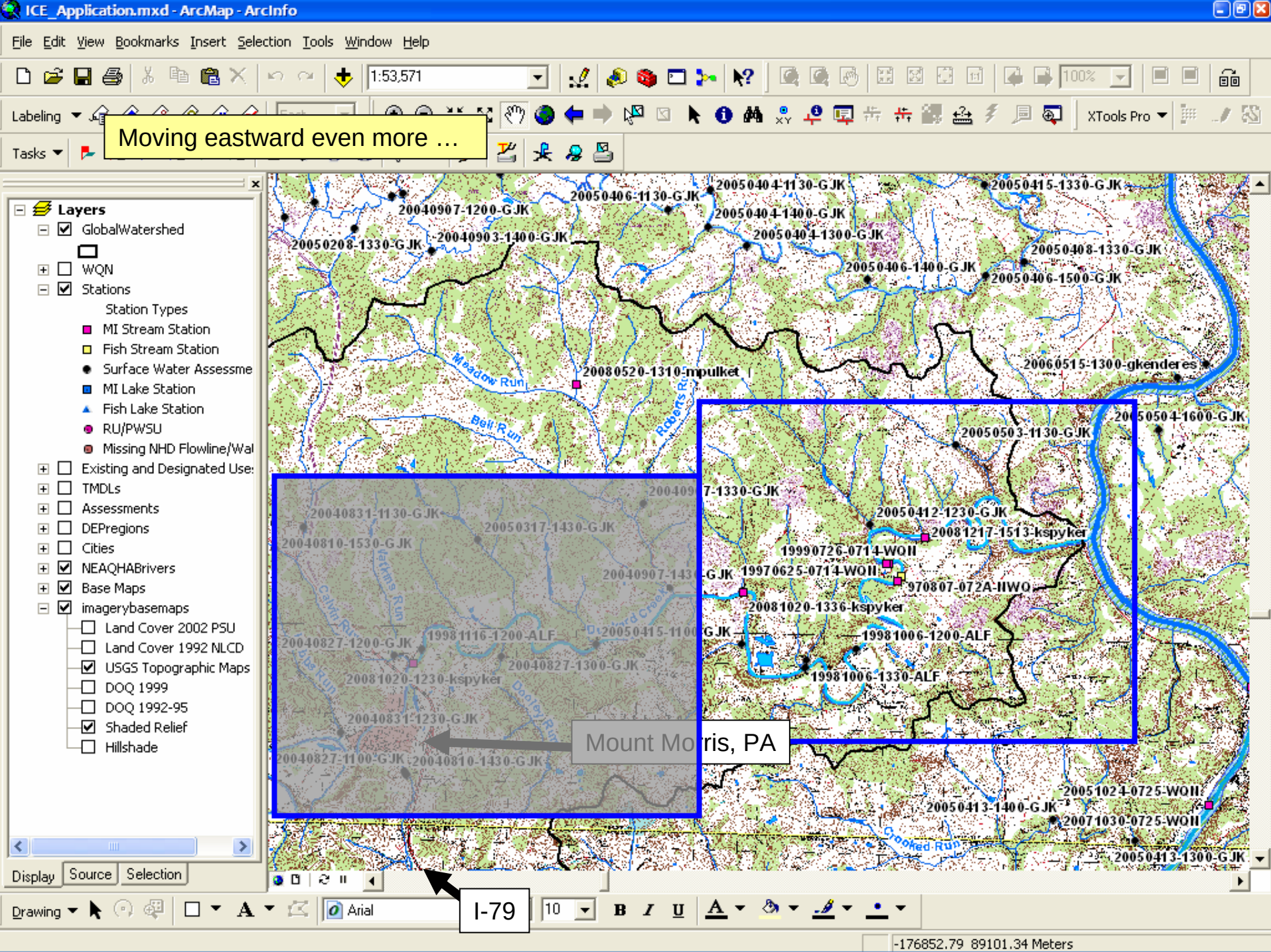
Lab samples

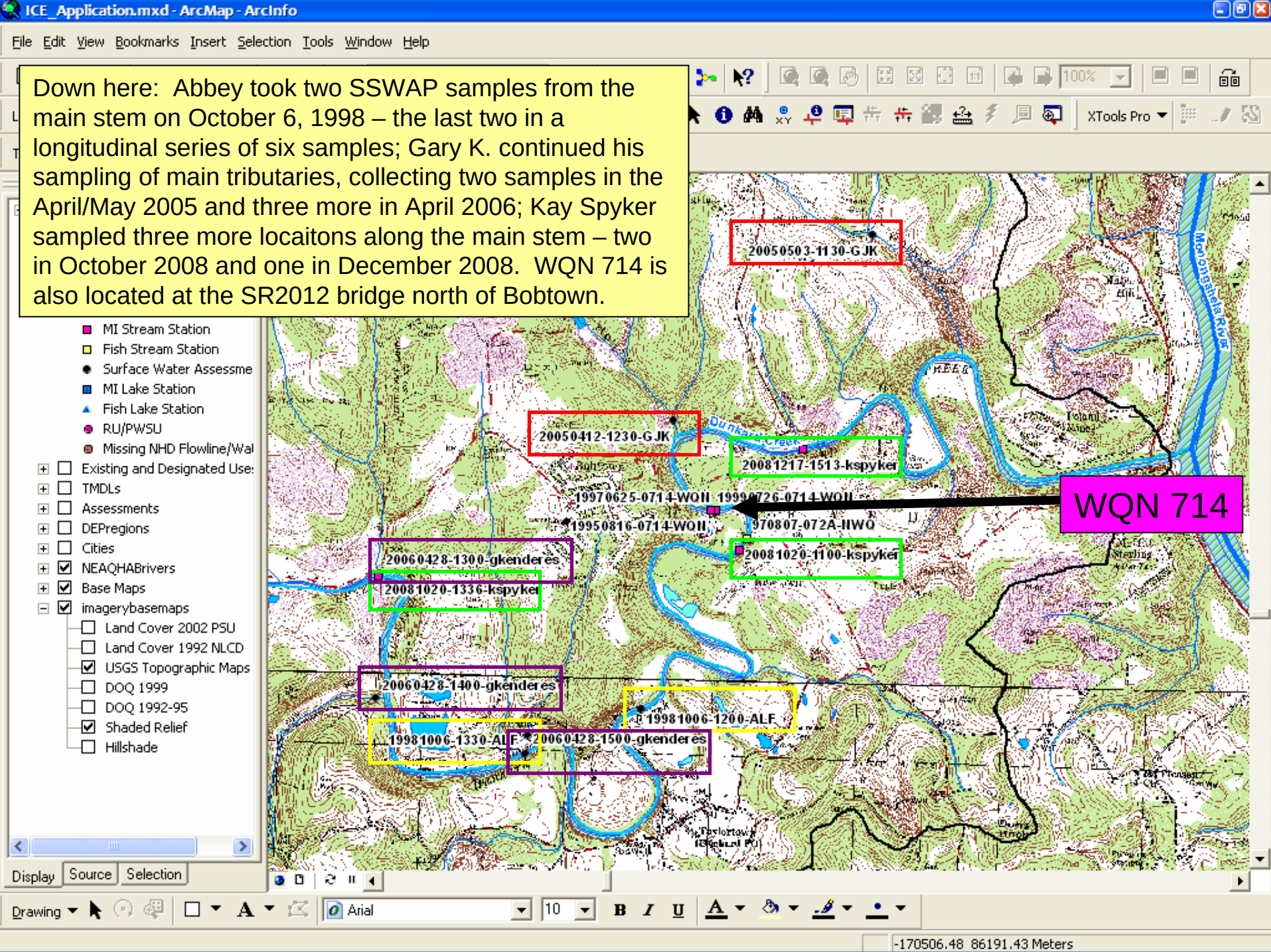
Temperature (°C)	8.4	Dissolved Oxygen (mg/L)	6.96	Flow (CFS)	
pH	7.22	Alkalinity (mg/L as CaCO3)		Conductivity	1099

Use Assessment Status for Stream Reach

Aquatic Life	Attaining (981116-1200-ALF)	
Fish Consumption	Impaired (20020111-1265-FIT) Source Unknown - Mercury	
Potable Water Supply		

Abbey's habitat evaluation from 10 years earlier and 300 meters downstream.


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
1:53,571
Labeling
XTools Pro
Tasks
Moving eastward even more …
Layers
GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
20050404-1130-GJK
20050415-1330-GJK
20050406-1130-GJK
20040907-1200-GJK
20050404-1400-GJK
20050208-1330-GJK
20040903-1400-GJK
20050404-1300-GJK
20050408-1330-GJK
20050406-1400-GJK
20050406-1500-GJK
20060515-1300-gkenderes
20080520-1310-mpulket
Meadow Run
Bell Run
Roberts Run
20050503-1130-GJK
20050504-1600-GJK
20050412-1230-GJK
20081217-1513-kspyker
19990726-0714-WQN
19970625-0714-WQN
970807-072A-NWQ
20081020-1336-kspyker
19981006-1200-ALF
19981006-1330-ALF
20040831-1130-GJK
20050317-1430-GJK
20040810-1530-GJK
20040827-1200-GJK
19981116-1200-ALF
20040827-1300-GJK
20081020-1230-kspyker
20040831-1230-GJK
20040827-1100-GJK
20040810-1430-GJK
Mount Morris, PA
20051024-0725-WQN
20050413-1400-GJK
20071030-0725-WQN
Crooked Run
20050413-1300-GJK
I-79
Drawing
Arial
10
-176852.79 89101.34 Meters


ICE_Application.mxd - ArcMap - ArcInfo
File Edit View Bookmarks Insert Selection Tools Window Help
Down here: Abbey took two SSWAP samples from the main stem on October 6, 1998 – the last two in a longitudinal series of six samples; Gary K. continued his sampling of main tributaries, collecting two samples in the April/May 2005 and three more in April 2006; Kay Spyker sampled three more locaitons along the main stem – two in October 2008 and one in December 2008. WQN 714 is also located at the SR2012 bridge north of Bobtown.
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use:
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display Source Selection
20050503-1130-GJK
20050412-1230-GJK
20081217-1513-kspyker
19970625-0714-WQN
19990726-0714-WQN
19950816-0714-WQN
970807-072A-HWQ
WQN 714
20081020-1100-kspyker
20060428-1300-gkenderes
20081020-1336-kspyker
20060428-1400-gkenderes
19981006-1200-ALF
19981006-1330-ALF
20060428-1500-gkenderes
Monongahela River
Dunkard Creek
Drawing
Arial
10
-170506.48 86191.43 Meters

Station ID 19981006-1200-ALF **Stream Name** Dunkard Creek (01213619)
Secondary Station ID
Survey ID 43092 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7481763 **Longitude** -79.9785956
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DC-7 AT TAYLORTOWN BRIDGE
SURVEY STATION 6

Biology / Physical Habitat Comments
BND AND ROSY-SIDED DACE
OTHER: STRATIOMYIDAE

Land Use Comments
FORESTED WITH MINING IMPACTS (ABANDONED), SCATTERED RESIDENCES

Impairment Status Comments
AMD, RUNOFF FROM DUMP , SEWAGE MALFUNCTIONS--9/22/98 ~1500 FISH KILLED --NOT POSITIVE OF REASON

***NOT IMPAIRINGIT BECAUSE IT IS BORDERLINE ONLY BECAUSE OF THE RECENT FISH KILL–TEMPORARY IMPAIRMENT

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Corduliidae	Rare	<3	5	PR
Coenagrionidae	Rare	<3	8	PR
Sialidae	Rare	<3	6	PR
Nigronia	Common	10-24	2	PR
Philopotamidae	Rare	<3	3	FC
Hydropsychidae	Common	10-24	5	FC
Elmidae	Present	3-9	5	CG
Athericidae	Rare	<3	2	PR
Other Diptera	Rare	<3	7	
Sphaeriidae	Present	3-9	8	FC
Oligochaeta	Rare	<3	10	CG

Main stem. No E or P. Low abundance. Abbey didn't impair it because she considered it a temporary incident related to a pollution incident and fishh kill on August 22, 1998 – two months earlier.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	11	50.0
EPT Richness (PTV 0 - 4)	1	9.1
Beck's Index (version 3)	2	14.3
Hilsenhoff Biotic Index	4.55	73.6
Shannon Diversitiy	1.90	72.0
	SSWAP IBI	43.8

1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N
Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	15	5. Channel Alteration	13	9. Condition of Banks	12
2. Epifaunal Substrate	9	6. Sediment Deposition	13	10. Bank Vegetation	12
3. Embeddedness	13	7. Frequency of Riffles	13	11. Grazing/Disruptive Pressure	12
4. Velocity/Depth Regime	12	8. Channel Flow Status	12	12. Riparian Zone Width	13

Instream Score (1. + 2. + 3. + 6.) = 50 Riparian Score (9. + 10. + 12.) = 37 Total Score = 149

Field Measurements

Lab samples

Temperature (°C)	19.6	Dissolved Oxygen (mg/L)	7.6	Flow (CFS)	
pH	6.7	Alkalinity (mg/L as CaCO3)		Conductivity	1416

Use Assessment Status for Stream Reach

Aquatic Life

Fish Consumption Impaired (20020111-1266-FIT)
Source Unknown - Mercury

Potable Water Supply Attaining (20080109-0816-mpulket)
Assessment based on WQN714 2005-2007 data No surface water supply withdrawal on

Epifaunal substrate scored 9; mostly mid supoptimal habitat otherwise.

pH 6.7 – seems low. Conductivity 1416!

Station ID 19981006-1330-ALF **Stream Name** Dunkard Creek (01213619)
Secondary Station ID
Survey ID 43096 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7452059 **Longitude** -79.9878705
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
ABOVE TAYLORTOWN BRIDGE
JUST ABOVE KILLSITE
SURVEY STATION 5 (MORGANTOWN QUAD)

Biology / Physical Habitat Comments
13 TAXA WITH 2 TYPES OF HEPTAGENIIDAE

Land Use Comments
FORESTED, MINING, DUMP, STP SCATTERED RESIDENCES

Impairment Status Comments
NOT IMPAIRED
SLIGHTLY MORE ALGAE GROWTH THAN DS LOCATIONS

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Isonychiidae	Common	10-24	3	CG
Heptageniidae	Abundant	25-100	3	SC
Caenidae	Rare	<3	7	CG
Tricorythidae	Present	3-9	4	CG
Coenagrionidae	Present	3-9	8	PR
Nigronia	Common	10-24	2	PR
Philopotamidae	Common	10-24	3	FC
Hydropsychidae	Present	3-9	5	FC
Chironomidae(other)	Present	3-9	6	
Athericidae	Present	3-9	2	PR
Tipulidae	Present	3-9	4	SH
Sphaeriidae	Present	3-9	8	FC

Main stem again. No Plecoptera. Not bad otherwise; caddisfly diversity a bit low. Larger stream. Early October sample. Upstream of kill site referenced in previous sample.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	12	54.5
EPT Richness (PTV 0 - 4)	4	36.4
Beck's Index (version 3)	2	14.3
Hilsenhoff Biotic Index	3.55	87.1
Shannon Diversitiy	2.10	79.6
	SSWAP IBI	54.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	Y	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	14	5. Channel Alteration	17	9. Condition of Banks	15
2. Epifaunal Substrate	12	6. Sediment Deposition	12	10. Bank Vegetation	16
3. Embeddedness	12	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regime	12	8. Channel Flow Status	12	12. Riparian Zone Width	16

Instream Score (1. + 2. + 3. + 6.) = 50 Riparian Score (9. + 10. + 12.) = 47 Total Score = 168

Field Measurements

Lab samples

Temperature (°C)	20.6	Dissolved Oxygen (mg/L)	10.4	Flow (CFS)	
pH	7.7	Alkalinity (mg/L as CaCO3)		Conductivity	1290

Use Assessment Status for Stream Reach

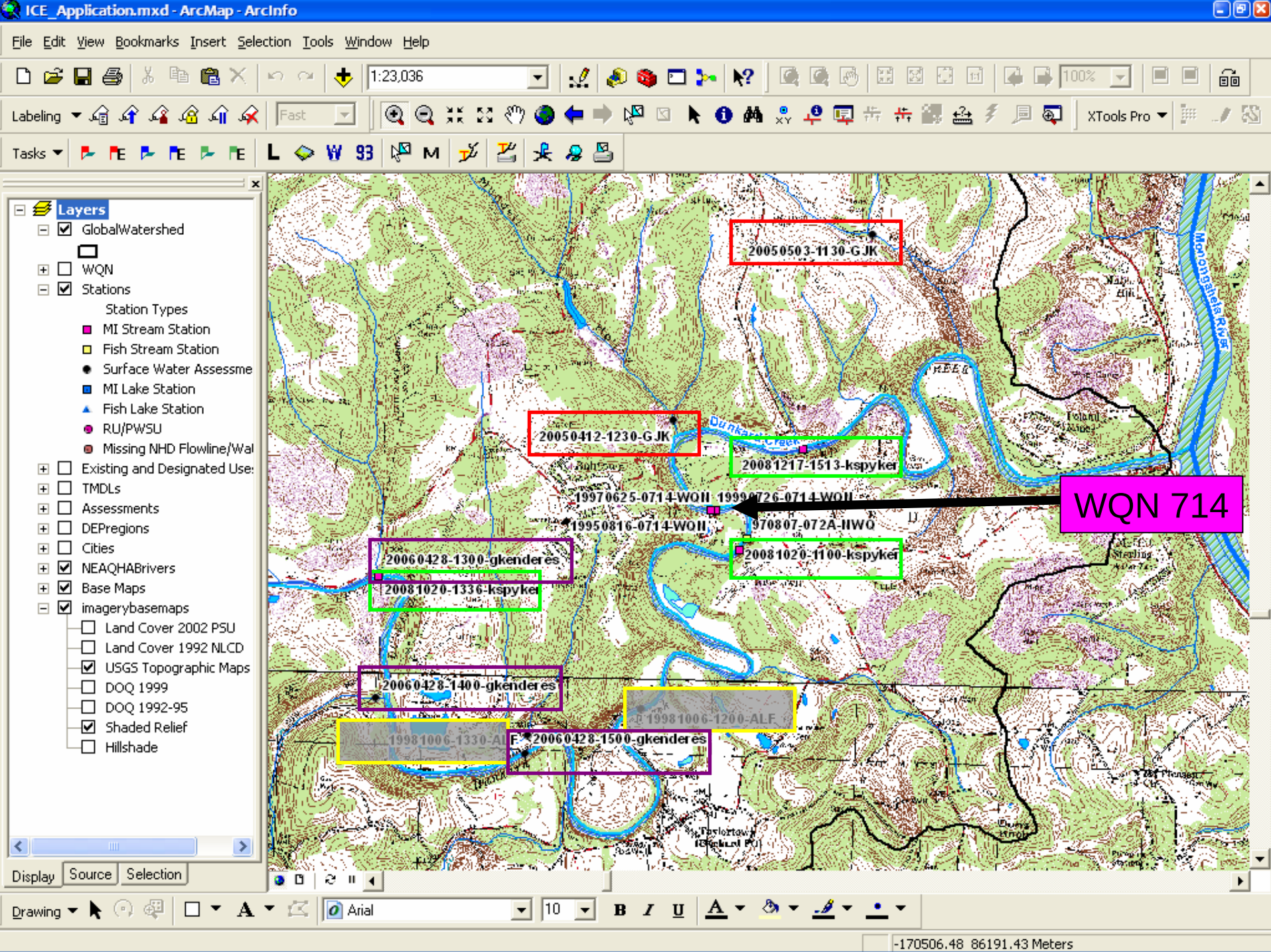
Aquatic Life Attaining (981006-1330-ALF)

Fish Consumption Impaired (20020111-1266-FIT)
Source Unknown - Mercury

Potable Water Supply Attaining (20080109-0816-mpulket)

Instream habitat low suboptimal; other wise high suboptimal, mostly.

pH 7.7. Conductivity 1290!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GlobalWatershed
WQN
Stations
Station Types
MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use:
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
20050503-1130-GJK
20050412-1230-GJK
20081217-1513-kspyker
19970625-0714-WQN
19990726-0714-WQN
19950816-0714-WQN
970807-072A-HWQ
20081020-1100-kspyker
20060428-1300-gkenderes
20081020-1336-kspyker
20060428-1400-gkenderes
19981006-1200-ALF
19981006-1330-ALF
20060428-1500-gkenderes
WQN 714
Monongahela River
Drawing
Arial
10
-170506.48 86191.43 Meters

Station ID 20050412-1230-GJK **Stream Name** Dunkard Creek (Unamed Trib 99418556 To)
Secondary Station ID
Survey ID 54417 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7661733 **Longitude** -79.9764471
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments

Quad Masontown
From Bobtown PA take State Highway 2019 east crossing Dunkard Creek making a left on Access Road to abandoned mine operations - Cross Dunkard Creek walking to mouth of stream - Sampled 300 feet upstream next to cave (right descending bank).

Biology / Physical Habitat Comments

Heptageniidae - Epeorus only collected (dominant taxa)
EPT taxa collected
9 total taxa collected

Land Use Comments

65% forested

Impairment Status Comments

Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Present	3-9	6	CG
Heptageniidae	Abundant	25-100	3	SC
Nemouridae	Present	3-9	2	SH
Leuctridae	Present	3-9	0	SH
Perlodidae	Common	10-24	2	PR
Hydropsychidae	Present	3-9	5	FC
Rhyacophilidae	Rare	<3	1	SC
Tipulidae	Present	3-9	4	SH
Gammaridae	Common	10-24	4	CG

Pretty decent; a little lacking in overall richness. Epeorus dominant.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	5	45.5
Beck's Index (version 3)	7	50.0
Hilsenhoff Biotic Index	3.07	93.6
Shannon Diversitiy	1.77	66.9
	SSWAP IBI	59.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		N
4. Stoneflies collectively present	Y	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	Y	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	17	9. Condition of Banks	12
2. Epifaunal Substrate	16	6. Sediment Deposition	11	10. Bank Vegetation	13
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	17
4. Velocity/Depth Regime	15	8. Channel Flow Status	16	12. Riparian Zone Width	18

Instream Score (1. + 2. + 3. + 6.) = 56 Riparian Score (9. + 10. + 12.) = 43 Total Score = 180

Field Measurements

Lab samples

Temperature (°C)	12.4	Dissolved Oxygen (mg/L)	7.7	Flow (CFS)	
pH	8.2	Alkalinity (mg/L as CaCO3)		Conductivity	470

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20050412-1230-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

TMDL Information (if any)

Embeddedness, sediment deposition and bank parameters scored low.

pH 8.2. Conductivity 470.

Station ID 20050503-1130-GJK **Stream Name** Dunkard Creek (Unamed Trib 99418418 To)
Secondary Station ID
Survey ID 54533 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7779638 **Longitude** -79.9607263
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments

Quad Masontown
From Garards Fort PA take Garards Fort Road east to T393 then left turn to Donham Road - Follow Donham Road 1/2 mile and pulloff - Sampled downstream of confluence 100 feet.

Biology / Physical Habitat Comments

20 salamanders collected
6 total taxa collected
Fewtaxa and tolerant
Gammaridae dominant family

Land Use Comments

40 % pasture
20 % abandoned mining
35% forested

Impairment Status Comments

Agriculture siltation

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Baetidae	Common	10-24	6	CG
Hydropsychidae	Present	3-9	5	FC
Tipulidae	Rare	<3	4	SH
Turbellaria	Present	3-9	9	
Gammaridae	Abundant	25-100	4	CG
Asellidae	Present	3-9	8	CG

Looks impacted – Gary agrees.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	6	27.3
EPT Richness (PTV 0 - 4)	0	0.0
Beck's Index (version 3)	0	0.0
Hilsenhoff Biotic Index	5.11	66.0
Shannon Diversitiy	1.29	48.7
	SSWAP IBI	28.4

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	13	5. Channel Alteration	15	9. Condition of Banks	14
2. Epifaunal Substrate	13	6. Sediment Deposition	13	10. Bank Vegetation	14
3. Embeddedness	10	7. Frequency of Riffles	12	11. Grazing/Disruptive Pressure	15
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 49 Riparian Score (9. + 10. + 12.) = 40 Total Score = 160

Field Measurements

Lab samples

Temperature (°C)	9.7	Dissolved Oxygen (mg/L)	13.9	Flow (CFS)	
pH	8.4	Alkalinity (mg/L as CaCO3)		Conductivity	394

Use Assessment Status for Stream Reach

Aquatic Life Impaired (20050503-1130-gkenderes)

Agriculture - Siltation

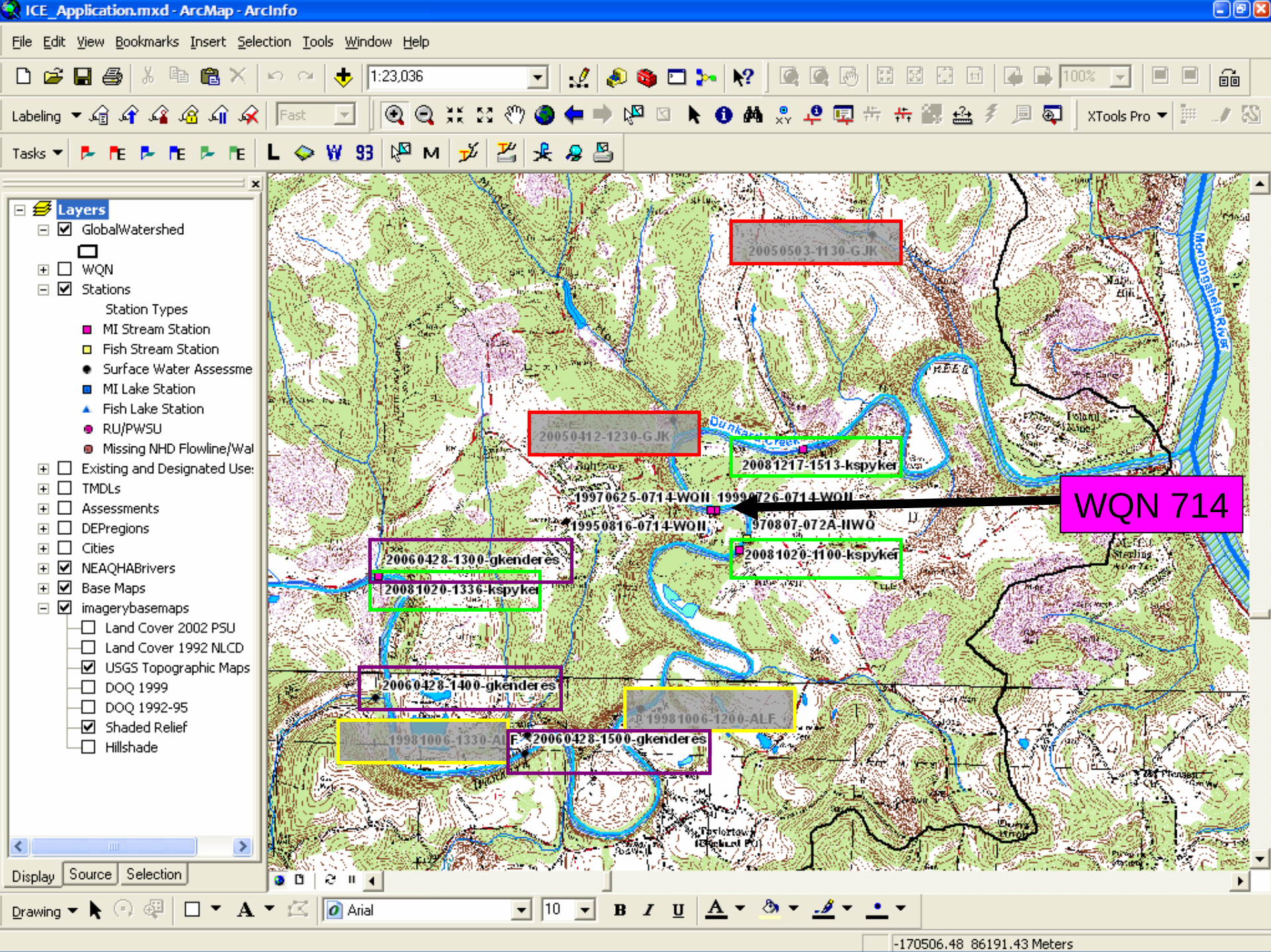
Fish Consumption

Potable Water Supply

Recreation

Suboptimal habitat.

pH 8.4. Conductivity 394.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MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
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Existing and Designated Use:
TMDLs
Assessments
DEPregions
Cities
NEAQHABrivers
Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
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20050412-1230-GJK
20081217-1513-kspyker
19970625-0714-WQN
19990726-0714-WQN
19950816-0714-WQN
970807-072A-HWQ
20081020-1100-kspyker
20060428-1300-gkenderes
20081020-1336-kspyker
20060428-1400-gkenderes
19981006-1200-ALF
19981006-1330-ALF
20060428-1500-gkenderes
WQN 714
Monongahela River
Drawing
Arial
10
-170506.48 86191.43 Meters

Station ID 20060428-1300-gkenderes **Stream Name** Dunkard Creek (Unamed Trib 99423910 To)
Secondary Station ID
Survey ID 55611 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7562507 **Longitude** -79.9998848
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments

Quad - Garards Fort
From Bobtown PA take Main Street to Bunner Hill Road and follow it down hill to stream crossing - Pull off on left and sampled downstream of culvert 20 feet.

Biology / Physical Habitat Comments

7 taxa collected
Chironomidae dominant taxa (abundant)
Chloroperlidae and Ephemerellidae Rare

Land Use Comments

Forested State Game Lands #223 covers watershed with active subsurface coal mining portal near mouth of stream.

Impairment Status Comments

Siltation from active subsurface mining not affecting the entire stream watershed, but closer to the mouth of the stream 2nd order section of stream.
Dark Sediment fines cover substrate just downstream of coal mining operation.

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Ephemerellidae	Rare	<3	2	CG
Calopterygidae	Rare	<3	5	PR
Chloroperlidae	Rare	<3	0	PR
Hydropsychidae	Rare	<3	5	FC
Chironomidae(other)	Abundant	25-100	6	
Gammaridae	Present	3-9	4	CG
Cambaridae	Rare	<3	6	CG

Looks impacted – Gary agrees.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	7	31.8
EPT Richness (PTV 0 - 4)	2	18.2
Beck's Index (version 3)	4	28.6
Hilsenhoff Biotic Index	5.45	61.3
Shannon Diversitiy	0.96	36.3
	SSWAP IBI	35.2

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		Y
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		Y
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		Y
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		Y
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized Y Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	11	5. Channel Alteration	11	9. Condition of Banks	11
2. Epifaunal Substrate	16	6. Sediment Deposition	13	10. Bank Vegetation	12
3. Embeddedness	11	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	13
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	10

Instream Score (1. + 2. + 3. + 6.) = 51 Riparian Score (9. + 10. + 12.) = 33 Total Score = 153

Field Measurements

Lab samples

Temperature (°C)	15.3	Dissolved Oxygen (mg/L)	10.7	Flow (CFS)	0
pH	8.6	Alkalinity (mg/L as CaCO3)	0	Conductivity	565

Use Assessment Status for Stream Reach

Aquatic Life Impaired (20060428-1300-gkenderes)

Subsurface Mining - Siltation

Fish Consumption

Potable Water Supply

Recreation

Suboptimal/marginal habitat.

pH 8.6! Conductivity 585.

Station ID 20060428-1400-gkenderes **Stream Name** Dunkard Creek (Unamed Trib 99418844 To)
Secondary Station ID
Survey ID 55612 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7484532 **Longitude** -79.9999399
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments

Quad - Osage and Morgantown North
From Bobtown PA take Bunner Hill Road down hill and left onto Unamed road at base of hill - Followroad to top of hill and turn right into abandon mine area access road - Park and walk down to Dunkard Creek crossing stream to UNT - Sampled UNT 200 feet upstream from mouth.□

Biology / Physical Habitat Comments

9 taxa collected
Gammaridae dominant taxa (abundant)
Nemouridae and Perlodidae common and Rhyacophilidae present

Land Use Comments

Mostly reclaimed abandon mining area and reforested.

Impairment Status Comments

Not impaired

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Nemouridae	Common	10-24	2	SH
Perlodidae	Common	10-24	2	PR
Nigronia	Present	3-9	2	PR
Hydropsychidae	Present	3-9	5	FC
Rhyacophilidae	Present	3-9	1	SC
Elmidae	Present	3-9	5	CG
Chironomidae(other)	Common	10-24	6	
Simuliidae	Present	3-9	6	FC
Gammaridae	Abundant	25-100	4	CG

Hmm… no mayflies is strange to me, especially in late April and especially when combined with Gammarid dominance. Although the stoneflies and Rhyacophila are nice. I'd probably impair this.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	9	40.9
EPT Richness (PTV 0 - 4)	3	27.3
Beck's Index (version 3)	5	35.7
Hilsenhoff Biotic Index	3.67	85.4
Shannon Diversitiy	1.88	71.1
	SSWAP IBI	52.1

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		N
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	Y	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	Y	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		N
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	Y	
13. Sample dominated by families with a mean tolerance value of 6 or more		N
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		Y
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	Y	
17b. Special conditions (impaired)		N

17c. Special conditons description

Nemouridae, Perlodidae, Nigronia, Rhyacophilidae, collected

Not impaired Y Biology impaired N Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	16	5. Channel Alteration	18	9. Condition of Banks	15
2. Epifaunal Substrate	13	6. Sediment Deposition	11	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	14	11. Grazing/Disruptive Pressure	20
4. Velocity/Depth Regime	16	8. Channel Flow Status	15	12. Riparian Zone Width	20

Instream Score (1. + 2. + 3. + 6.) = 53 Riparian Score (9. + 10. + 12.) = 50 Total Score = 186

Field Measurements

Lab samples

Temperature (°C)	13.2	Dissolved Oxygen (mg/L)	10.4	Flow (CFS)	0
pH	8.5	Alkalinity (mg/L as CaCO3)	0	Conductivity	897

Use Assessment Status for Stream Reach

Aquatic Life Attaining (20060428-1400-gkenderes)

Fish Consumption

Potable Water Supply

Recreation

Sediment deposition, embeddedness and epifaunal substrate scored a bit low; not that bad otherwise.

pH 8.5! Conductivity 897!

Station ID 20060428-1500-gkenderes **Stream Name** Dunkard Creek (Unamed Trib 134839740 Of)
Secondary Station ID
Survey ID 55613 **Sample Method** Kick Screen: Statewide Surface Water Assessment Program
Collection Date **Collection Time** **Latitude** 39.7463661 **Longitude** -79.9877105
HUC8 05020005 Lower Monongahela. Pennsylvania, West Virginia.

Station Location Comments

Quad - Morgantown North
From Bobtown PA take Main Street down hill to hard right onto unnamed road - Followroad to stream crossing and pull off side of road next to Dunkard Creek - Sampled downstream of culvert 20 feet. Note: Stream connects to Dunkard Creek and does not intersect with another UNT before entering Dunkard Creek. Arc 9 stream route is incorrect.

Biology / Physical Habitat Comments

5 taxa collected
Chironomidae dominant taxa (abundant)
Asellidae, Hydropsychidae, Simuliidae, and Tipulidae collected and all present

Land Use Comments

Other: Road follows stream.
Some forested area and residential in headwaters.
Some Abandon mining lower section of stream.

Impairment Status Comments

Habitat Modification with siltation

Taxa List

Taxa Name	Abundance Category	Abundance Range	PTV	FFG
Hydropsychidae	Present	3-9	5	FC
Chironomidae(other)	Abundant	25-100	6	
Tipulidae	Present	3-9	4	SH
Simuliidae	Present	3-9	6	FC
Asellidae	Present	3-9	8	CG

Looks impacted – Gary agrees.

SSWAP metrics and IBI

	Raw Metric Value	Standardized Metric Value
Total Richness	5	22.7
EPT Richness (PTV 0 - 4)	0	0.0
Beck's Index (version 3)	0	0.0
Hilsenhoff Biotic Index	5.92	55.1
Shannon Diversitiy	1.08	40.9
	SSWAP IBI	23.7

SLIMS MI & Fish read-only data - [SSWAP Bug Summary]

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1. Abundance obviously low		N
2. Seven or fewer families		Y
3. Three or fewer mayfly individuals (exclude Baetidae, Caenidae, Siphlonuridae)		Y
4. Stoneflies collectively present	N	
5. Mayflies and caddisflies collectively abundant (exclude Baetidae, Caenidae, Siphlonuridae, Hydropsychidae, Polycentropidae)	N	
6. Jul - Sep: at least four EPT families with tolerance value of 4 or less Nov - May: at least six EPT families with tolerance value of 4 or less	N	
7. Four or more families with tolerance value of 3 or less	N	
8. Six or more families with tolerance value of 4 or less	N	
9. Dominant family with tolerance value of 4 or less	N	
10. Dominant family with tolerance value greater than 5 (criteria 7 and 8 negate this criterion)		Y
11. Seven or more families with tolerance value of 6 or more (criteria 7 and 8 negate this criterion)		N
12. Sample dominated by families with a mean tolerance value of 5 or less	N	
13. Sample dominated by families with a mean tolerance value of 6 or more		Y
14. Embeddedness (or substrate character for pool/glide) + sediment deposition = 24 or less (20 or less for warmwater, low gradient streams)		N
15. Condition of banks + bank vegetation = 24 or less (20 or less for warmwater, low gradient streams)		N
16. Total habitat score 140 or less for forested, coldwater, high gradient streams (120 or less for warmwater, low gradient streams)		N
17a. Special conditions (attaining)	N	
17b. Special conditions (impaired)		N
17c. Special conditons description		

Not impaired N Biology impaired Y Habitat impaired N Insufficient data N

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool/Glide Assessment N

1. Instream Cover	14	5. Channel Alteration	13	9. Condition of Banks	15
2. Epifaunal Substrate	14	6. Sediment Deposition	15	10. Bank Vegetation	15
3. Embeddedness	13	7. Frequency of Riffles	16	11. Grazing/Disruptive Pressure	14
4. Velocity/Depth Regime	14	8. Channel Flow Status	15	12. Riparian Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 56 Riparian Score (9. + 10. + 12.) = 41 Total Score = 169

Field Measurements

Lab samples

Temperature (°C)	16.6	Dissolved Oxygen (mg/L)	9.8	Flow (CFS)	0
pH	8.7	Alkalinity (mg/L as CaCO3)	0	Conductivity	755

Use Assessment Status for Stream Reach

Designated Use Existing Use

Aquatic Life

Impaired (20060428-1500-gkenderes)

Habitat Modification - Siltation

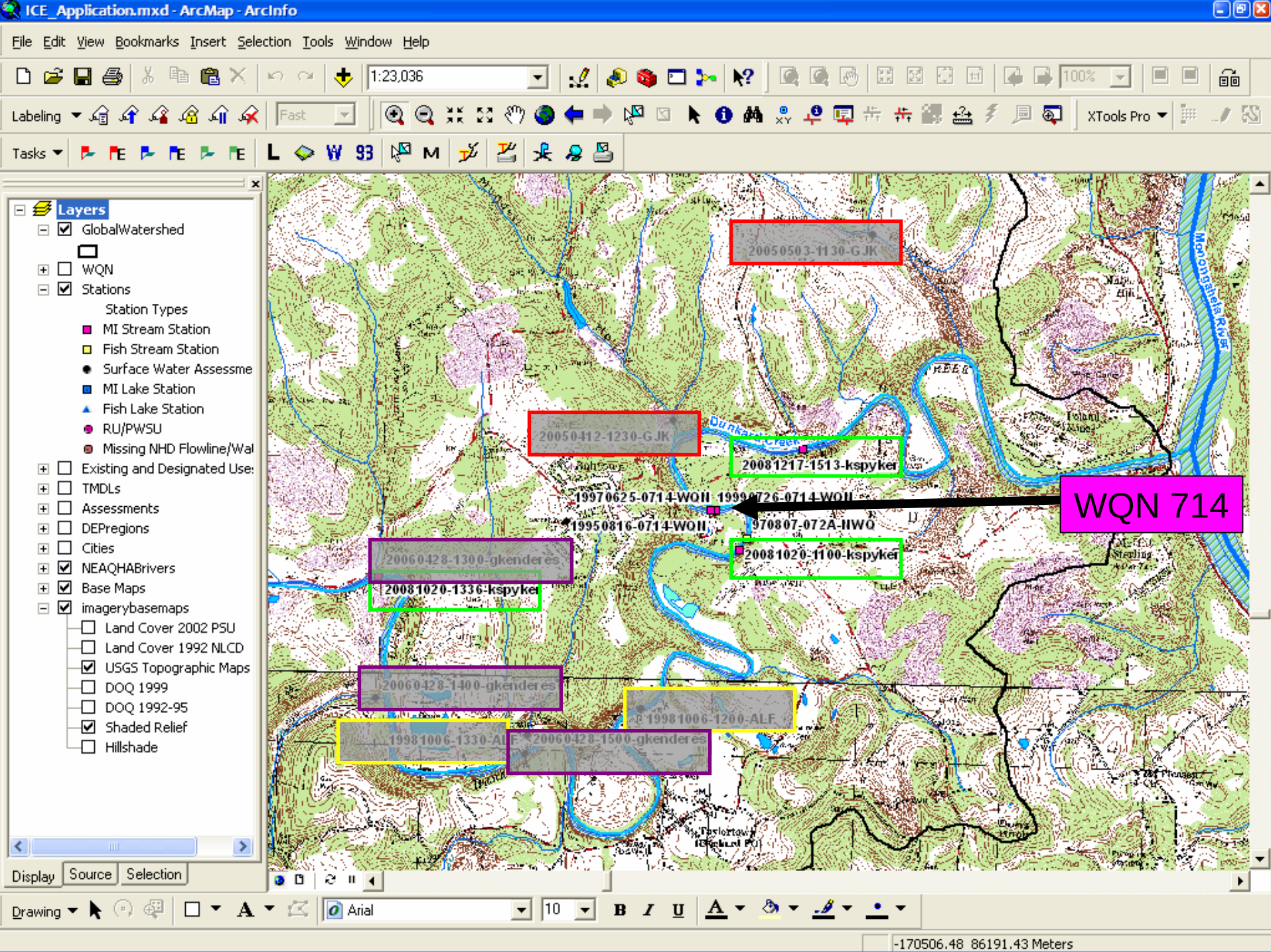
Note: Stream connects directly with Dunkard Cre
(gkenderes)

Note: Stream connects directly with Dunkard Cre

Suboptimal habitat.

pH 8.7. Conductivity 755!

Fish Consumption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GlobalWatershed
WQN
Stations
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MI Stream Station
Fish Stream Station
Surface Water Assessme
MI Lake Station
Fish Lake Station
RU/PWSU
Missing NHD Flowline/Wal
Existing and Designated Use
TMDLs
Assessments
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Cities
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Base Maps
imagerybasemaps
Land Cover 2002 PSU
Land Cover 1992 NLCD
USGS Topographic Maps
DOQ 1999
DOQ 1992-95
Shaded Relief
Hillshade
Display
Source
Selection
20050503-1130-GJK
20050412-1230-GJK
20081217-1513-kspyker
19970625-0714-WQN
19990726-0714-WQN
19950816-0714-WQN
970807-072A-HWQ
20081020-1100-kspyker
20060428-1300-gkenderes
20081020-1336-kspyker
20060428-1400-gkenderes
19981006-1200-ALF
19981006-1330-ALF
20060428-1500-gkenderes
WQN 714
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-170506.48 86191.43 Meters

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

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Station ID 20081020-1100-kspyker **Stream Name** Dunkard Creek (01213619)
Secondary Station ID DC7
Survey ID 59018 **Sample Method** 6-Dframe Composite, 200 subsample
Collection Date 20081020 **Collection Time** 1100 **Latitude** 39.7582372 **Longitude** -79.9709568
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DC7--Dunkard Creek at Bobtown near USGS gaging station□□□

Biology / Habitat Comments

Land Use Comments

Station Impairment Status Comments

Taxa List

grids from first pan: 28 | # grids from second pan: 0 | Subsample Size: 160

Taxa Name	Individuals	PTV	FFG	BCG Attribute (coldwater)	BCG Attribute (warmwater)	*any EV indicator taxa names are highlighted*
Nigronia	2	2	PR	3	3	
Hydropsyche	29	5	FC	5	5	
Leucotrichia	9	6	SC	4	4	
Petrophila	2	5	SC	5	5	
Psephenus	3	4	SC	4	4	
Dubiraphia	1	6	SC	4	4	
Optioservus	14	4	SC	4	4	
Stenelmis	87	5	SC	5	5	
Ceratopogonidae	2	6	PR	4	4	
Chironomidae	10	6	CG	5	5	
Oligochaeta	1	10	CG	5	5	

Looks impacted to me: no E; no P most all tolerant or facultative organisms.

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

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Metric Names	Raw Metric Values	Standardized Metric Values: Freestone Riffle-Run 6D200 2009 small	6D200 2009 large	6D200 2007	2D100	Multihabitat Pool-Glide	Limestone
Total Richness	11	33.3	33.3	31.4		35.5	59.4
Ephemeroptera Richness	0					0.0	
Trichoptera Richness	2					18.2	
EPT Richness	2			8.7	13.1	11.8	25.0
Trichoptera Richness (PTV 0-4)	0				0.0		
EPT Richness (PTV 0-4)	0	0.0	0.0				
Beck's Index (version 3)	1	2.6	3.3	2.6			
Beck's Index (version 4)	3				15.1	13.6	
FC + PR + SH Richness	3				25.9		
Hilsenhoff Biotic Index	5.03	61.3	66.3	60.5	73.8		79.1
% Inolerant Individuals (PTV 0-3)	1.3	1.5	1.9				4.8
% Intolerant Individuals (PTV 0-5)	85.6			92.6			
% Tolerant Individuals (PTV 7-10)	0.6						100.4
Shannon Diversity	1.49	52.1	52.7	51.5		61.4	77.7
IBI score		**25.1**	**26.3**	**41.2**	**25.6**	**23.4**	**57.3**

IBI scores indicate clear impairment.

BCG Richness Ratio	0.10	% Ephemeroptera	0.0	% Baetis	0.0	% Chironomidae	6.3
BCG % Individuals Ratio	0.01	% Plecoptera	0.0	% Ephemerella	0.0	% Simuliidae	0.0
EV Indicator Taxa		% Trichoptera	23.8	% Dominant Taxon	54.4	% Prosimulium	0.0

Not impaired N Biology impaired N Habitat impaired N Insufficient data Y

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool-Glide Assessment? N

1. Instream Cover	11	5. Channel Alteration	18	9. Contition of Banks	15
2. Epifaunal Substrate	11	6. Sediment Deposition	11	10. Bank Vegetative Protection	16
3. Embeddedness	10	7. Frequency of Riffles	11	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regimes	13	8. Channel Flow Status	10	12. Riparian Vegetative Zone Width	12

Instream Score (1. + 2. + 3. + 6.) = 43 Riparian Score (9. + 10. + 12.) = 43 Total Score = 154

Field Measurements

Lab samples

Temperature (°C)	0	Dissolved Oxygen (mg/L)	0	Flow (CFS)	0
pH	0	Total Alkalinity (mg/L as CaCO3)	0	Conductivity (uS/cm)	0

Use Assessment Status for Stream Reach

Aquatic Life Attaining (981006-1200-ALF)

Fish Consumption Impaired (20020111-1266-FIT)

Source Unknown - Mercury

Instream habitat parameters scored pretty low, along with channel flow.

No chemistry.

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

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Station ID 20081020-1336-kspyker **Stream Name** Dunkard Creek (01213619)
Secondary Station ID DC6
Survey ID 59020 **Sample Method** 6-Dframe Composite, 200 subsample
Collection Date 20081020 **Collection Time** 1336 **Latitude** 39.7560505 **Longitude** -79.9999534
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DC6--Dunkard Creek 1000 ft downstream of MedowRun□□□

Biology / Habitat Comments

Land Use Comments

Station Impairment Status Comments

Taxa List

# grids from first pan	28	# grids from second pan	0	Subsample Size	253

Taxa Name	Individuals	PTV	FFG	BCG Attribute (coldwater)	BCG Attribute (warmwater)
Tricorythodes	5	4	CG	5	5
Argia	1	6	PR	4	4
Sialis	4	6	PR	5	5
Corydalus	3	4	PR	4	4
Cheumatopsyche	2	6	FC	5	5
Hydroptilidae	3	4	PI	0	0
Petrophila	1	5	SC	5	5
Psephenus	7	4	SC	4	4
Optioservus	17	4	SC	4	4
Stenelmis	40	5	SC	5	5
Ceratopogonidae	3	6	PR	4	4
Hemerodromia	1	6	PR	4	4
Chrysops	2	7	PI	5	5
Chironomidae	163	6	CG	5	5
Oligochaeta	1	10	CG	5	5

any EV indicator taxa names are highlighted

Looks impacted to me:
Tricoythodes only E; no P most all tolerant or facultative organisms.
Subsample a bit over target range.

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

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Metric Names	Raw Metric Values	Standardized Metric Values: Freestone Riffle-Run 6D200 2009 small	6D200 2009 large	6D200 2007	2D100	Multihabitat Pool-Glide	Limestone
Total Richness	15	45.5	45.5	42.9		48.4	81.0
Ephemeroptera Richness	1					16.7	
Trichoptera Richness	2					18.2	
EPT Richness	3			13.0	19.6	17.6	37.5
Trichoptera Richness (PTV 0-4)	1				27.8		
EPT Richness (PTV 0-4)	2	10.5	11.1				
Beck's Index (version 3)	0	0.0	0.0	0.0			
Beck's Index (version 4)	5				25.1	22.7	
FC + PR + SH Richness	6				51.7		
Hilsenhoff Biotic Index	5.58	54.4	58.9	53.7	65.5		70.2
% Inolerant Individuals (PTV 0-3)	0.0	0.0	0.0				0.0
% Intolerant Individuals (PTV 0-5)	30.0			32.5			
% Tolerant Individuals (PTV 7-10)	1.2						99.8
Shannon Diversity	1.32	46.1	46.7	45.6		54.3	68.8
IBI score		**26.1**	**27.0**	**31.3**	**37.9**	**29.7**	**55.3**

IBI scores indicate clear impairment.

BCG Richness Ratio	0.00	% Ephemeroptera	2.0	% Baetis	0.0	% Chironomidae	64.4
BCG % Individuals Ratio	0.00	% Plecoptera	0.0	% Ephemerella	0.0	% Simuliidae	0.0
EV Indicator Taxa		% Trichoptera	2.0	% Dominant Taxon	64.4	% Prosimulium	0.0

Not impaired N Biology impaired N Habitat impaired N Insufficient data Y

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool-Glide Assessment? N

1. Instream Cover	11	5. Channel Alteration	16	9. Contition of Banks	11
2. Epifaunal Substrate	13	6. Sediment Deposition	11	10. Bank Vegetative Protection	11
3. Embeddedness	10	7. Frequency of Riffles	9	11. Grazing/Disruptive Pressure	16
4. Velocity/Depth Regimes	13	8. Channel Flow Status	16	12. Riparian Vegetative Zone Width	10

Instream Score (1. + 2. + 3. + 6.) = 45 Riparian Score (9. + 10. + 12.) = 32 Total Score = 147

Field Measurements

Lab samples

Temperature (°C)	0	Dissolved Oxygen (mg/L)	0	Flow (CFS)	0
pH	0	Total Alkalinity (mg/L as CaCO3)	0	Conductivity (uS/cm)	0

Use Assessment Status for Stream Reach

Aquatic Life Attaining (981116-1200-ALF)

Fish Consumption Impaired (20020111-1266-FIT)

Source Unknown - Mercury

Habitat almost all scored low suboptimal / high marginal.

No chemistry.

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

File Edit View Tools Window Help Adobe PDF

Type a question for help

95% Close Setup

Station ID 20081217-1513-kspyker **Stream Name** Dunkard Creek (01213619)
Secondary Station ID DC8a
Survey ID 59017 **Sample Method** 6-Dframe Composite, 200 subsample
Collection Date 20081020 **Collection Time** 1000 **Latitude** 39.7645388 **Longitude** -79.9660049
HUC8 05020005 Lower Monongahela, Pennsylvania, West Virginia.

Station Location Comments
DC8a–Dunkard Creek downstream of bobtown at gated road□□□

Biology / Habitat Comments

Land Use Comments

Station Impairment Status Comments

Taxa List

# grids from first pan	28	# grids from second pan	0	Subsample Size	39

Taxa Name	Individuals	PTV	FFG	BCG Attribute (coldwater)	BCG Attribute (warmwater)	*any EV indicator taxa names are highlighted*
Corydalus	1	4	PR	4	4	
Nigronia	1	2	PR	3	3	
Hydropsyche	11	5	FC	5	5	
Optioservus	1	4	SC	4	4	
Stenelmis	22	5	SC	5	5	
Chironomidae	1	6	CG	5	5	
Oligochaeta	2	10	CG	5	5	

Looks impacted to me: no E; no P most all tolerant or facultative organisms. Abundance way low.

SLIMS MI & Fish read-only data - [Rapid Bioassessment Bug Summary]

File Edit View Tools Window Help Adobe PDF

Type a question for help

95% Close Setup

Metric Names	Raw Metric Values	Standardized Metric Values: Freestone Riffle-Run 6D200 2009 small	6D200 2009 large	6D200 2007	2D100	Multihabitat Pool-Glide	Limestone
Total Richness	7	21.2	21.2	20.0		22.6	37.8
Ephemeroptera Richness	0					0.0	
Trichoptera Richness	1					9.1	
EPT Richness	1			4.3	6.5	5.9	12.5
Trichoptera Richness (PTV 0-4)	0				0.0		
EPT Richness (PTV 0-4)	0	0.0	0.0				
Beck's Index (version 3)	1	2.6	3.3	2.6			
Beck's Index (version 4)	3				15.1	13.6	
FC + PR + SH Richness	3				25.9		
Hilsenhoff Biotic Index	5.15	59.8	64.6	58.9	71.9		77.0
% Inolerant Individuals (PTV 0-3)	2.6	3.0	3.9				9.7
% Intolerant Individuals (PTV 0-5)	92.3			99.8			
% Tolerant Individuals (PTV 7-10)	5.1						95.8
Shannon Diversity	1.21	42.2	42.7	41.7		49.7	62.9
IBI score		**21.5**	**22.6**	**37.9**	**23.9**	**16.8**	**51.6**

IBI scores indicate clear impairment.

BCG Richness Ratio	0.17	% Ephemeroptera	0.0	% Baetis	0.0	% Chironomidae	2.6
BCG % Individuals Ratio	0.03	% Plecoptera	0.0	% Ephemerella	0.0	% Simuliidae	0.0
EV Indicator Taxa		% Trichoptera	28.2	% Dominant Taxon	56.4	% Prosimulium	0.0

Not impaired N Biology impaired N Habitat impaired N Insufficient data Y

Rock pick influenced assessment N Impact is localized N Re-evaluate designated use N

Physical Habitat Assessment

Pool-Glide Assessment? N

1. Instream Cover	10	5. Channel Alteration	18	9. Contition of Banks	15
2. Epifaunal Substrate	13	6. Sediment Deposition	6	10. Bank Vegetative Protection	17
3. Embeddedness	6	7. Frequency of Riffles	8	11. Grazing/Disruptive Pressure	18
4. Velocity/Depth Regimes	16	8. Channel Flow Status	8	12. Riparian Vegetative Zone Width	11

Instream Score (1. + 2. + 3. + 6.) = 35 Riparian Score (9. + 10. + 12.) = 43 Total Score = 146

Field Measurements

Lab samples

Temperature (°C)	0	Dissolved Oxygen (mg/L)	0	Flow (CFS)	0
pH	0	Total Alkalinity (mg/L as CaCO3)	0	Conductivity (uS/cm)	0

Use Assessment Status for Stream Reach

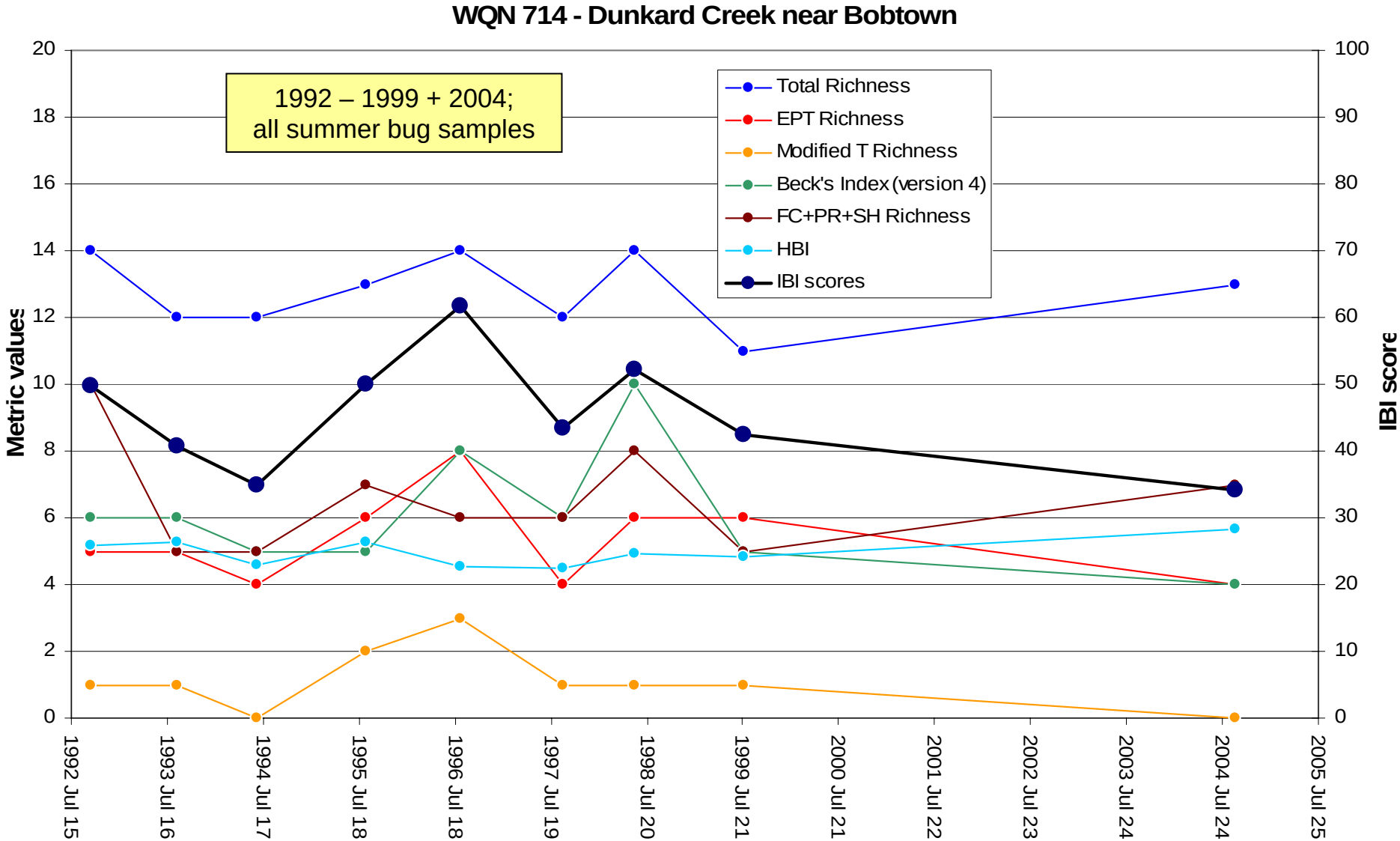
Aquatic Life Impaired (981116-1330-ALF)

Abandoned Mine Drainage - Metals, Abandoned M

Fish Consumption Impaired (20020111-1266-FIT)

Habitat almost all scored low suboptimal / high marginal, a few low optimals.

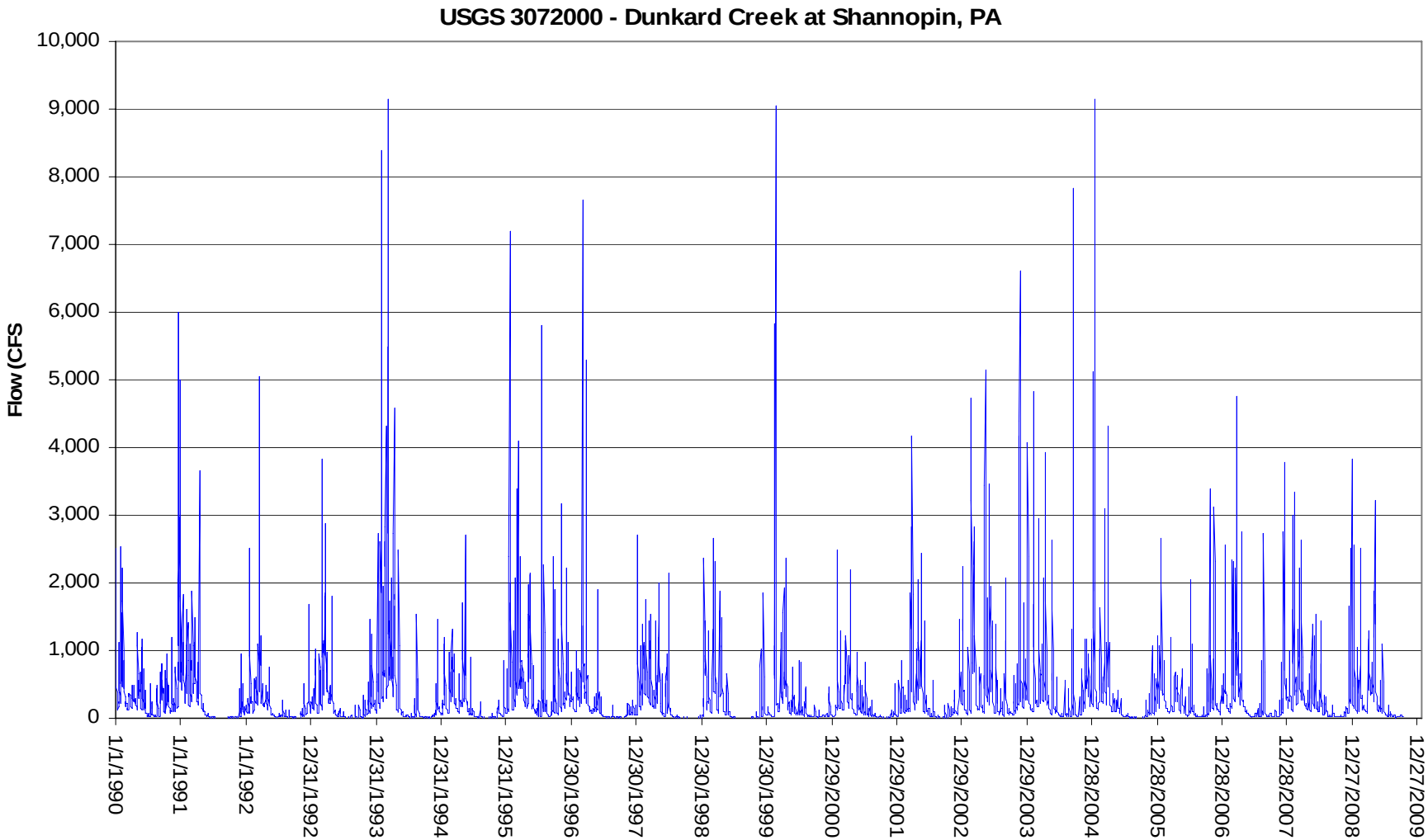
No chemistry.



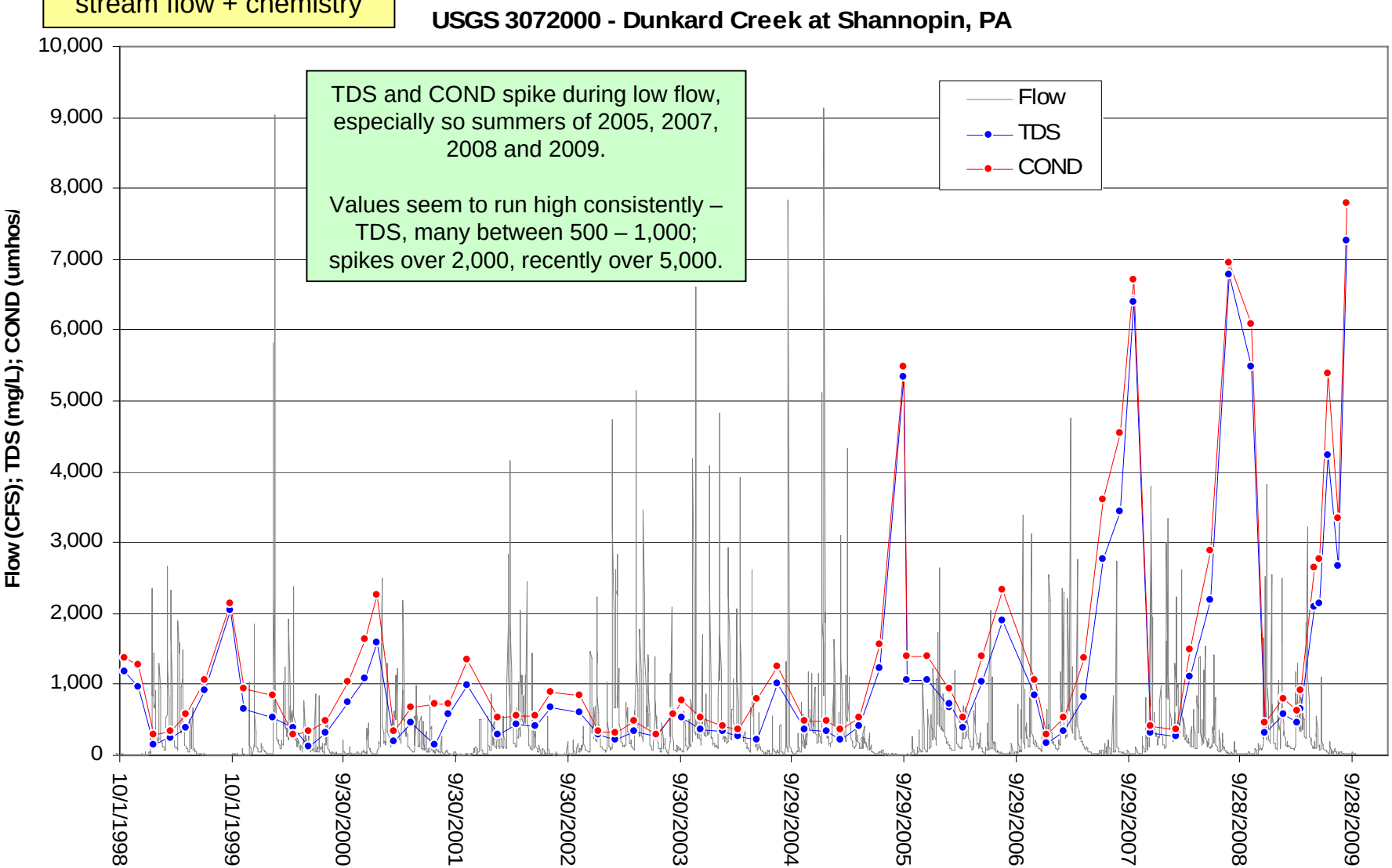
2D100 IBI scores between 62 and 34, most between 50 and 40. Total richness between 14 and 11. EPT between 8 and 4.

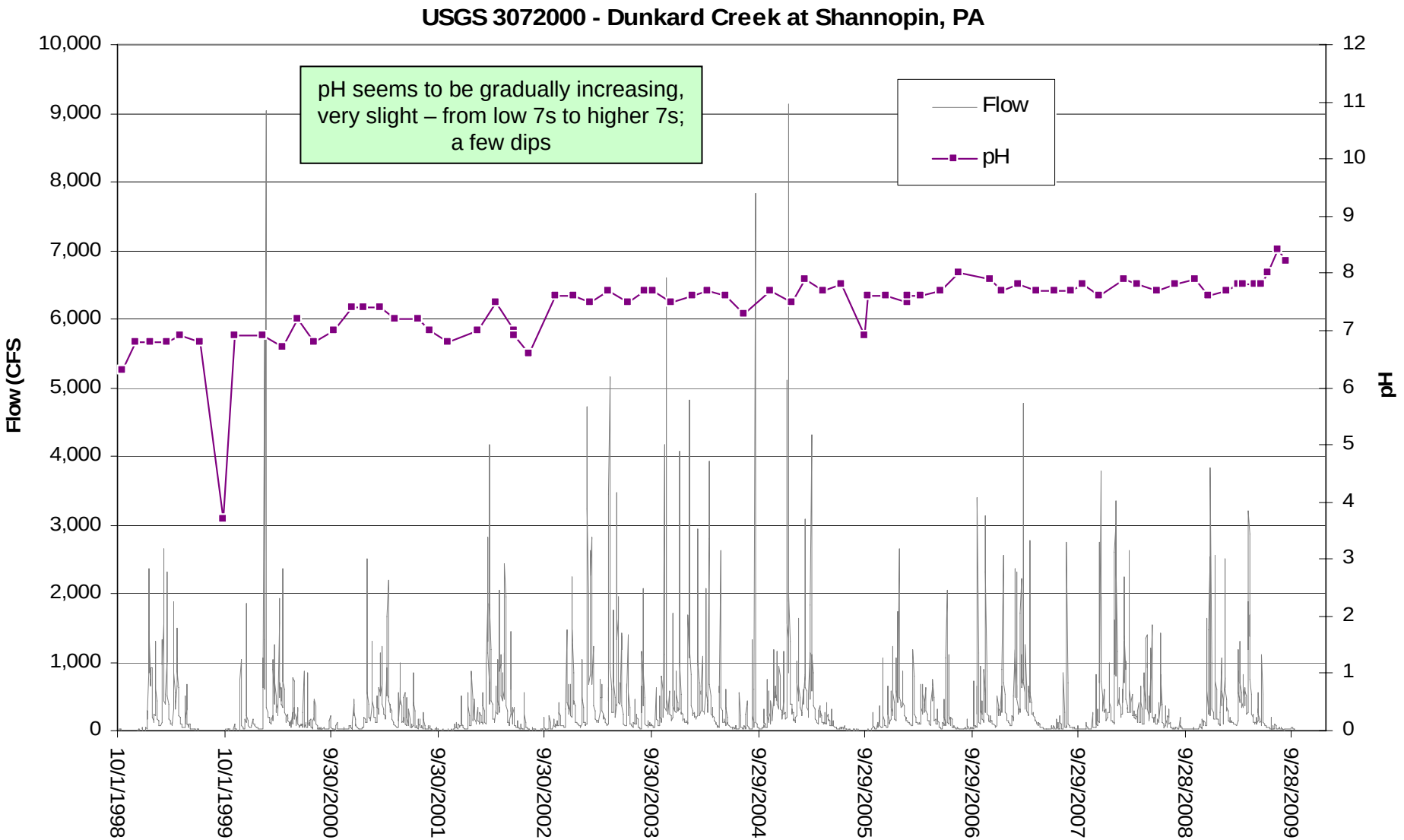
Tricorythodes usually dominant, many times only, mayfly – some Heptageniids, Baetids and Caenis mixed in. Usually a Megalopteran or two. Only 1998 sample had any stoneflies: 1 Leuctra + 8 Perlesta. Chimarra, Hydropsyche, Cheumatopsyche usually dominant caddisflies. Stenelmis and Chironomidae not uncommon.

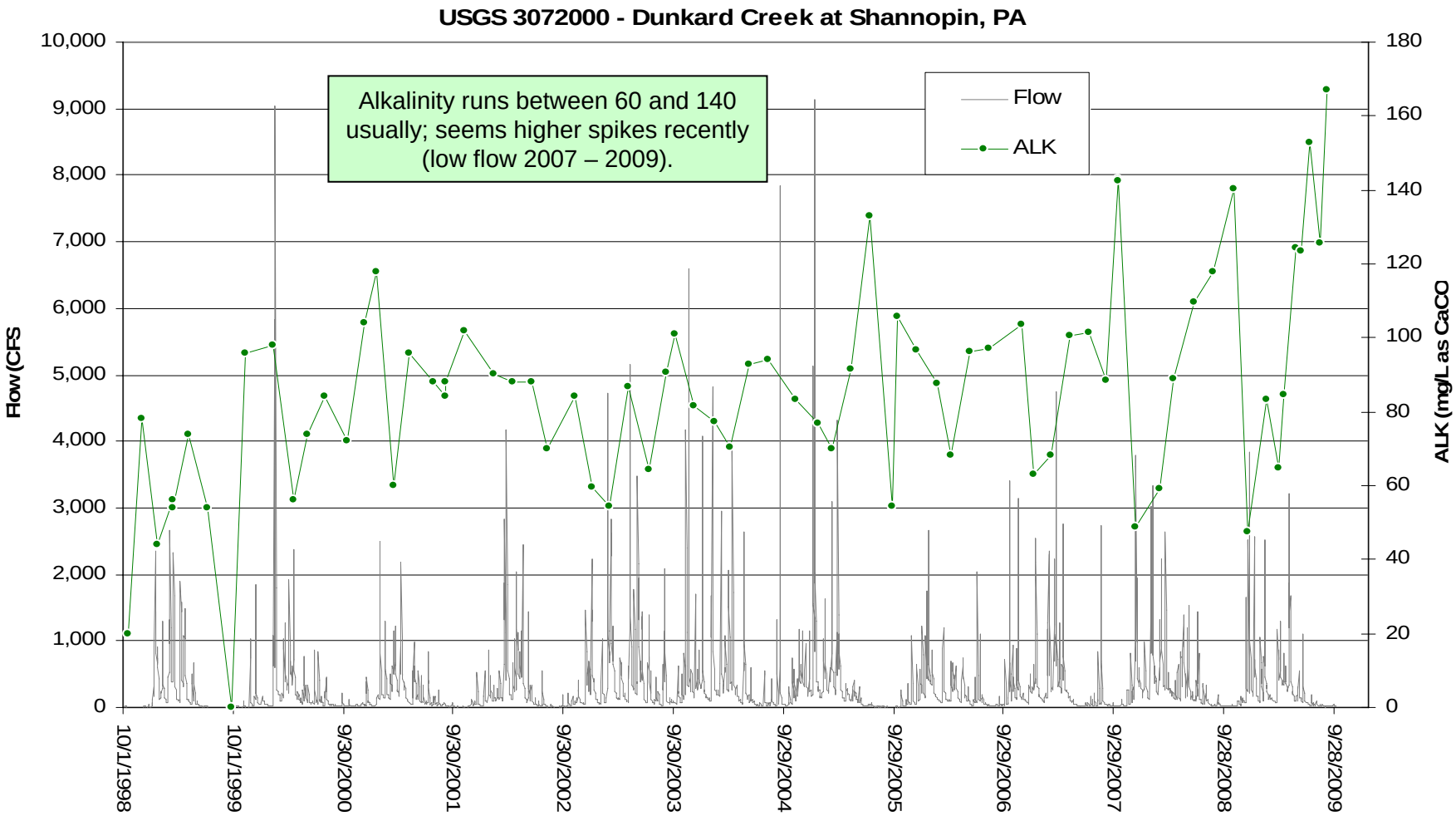
1990 – 2009
stream flow

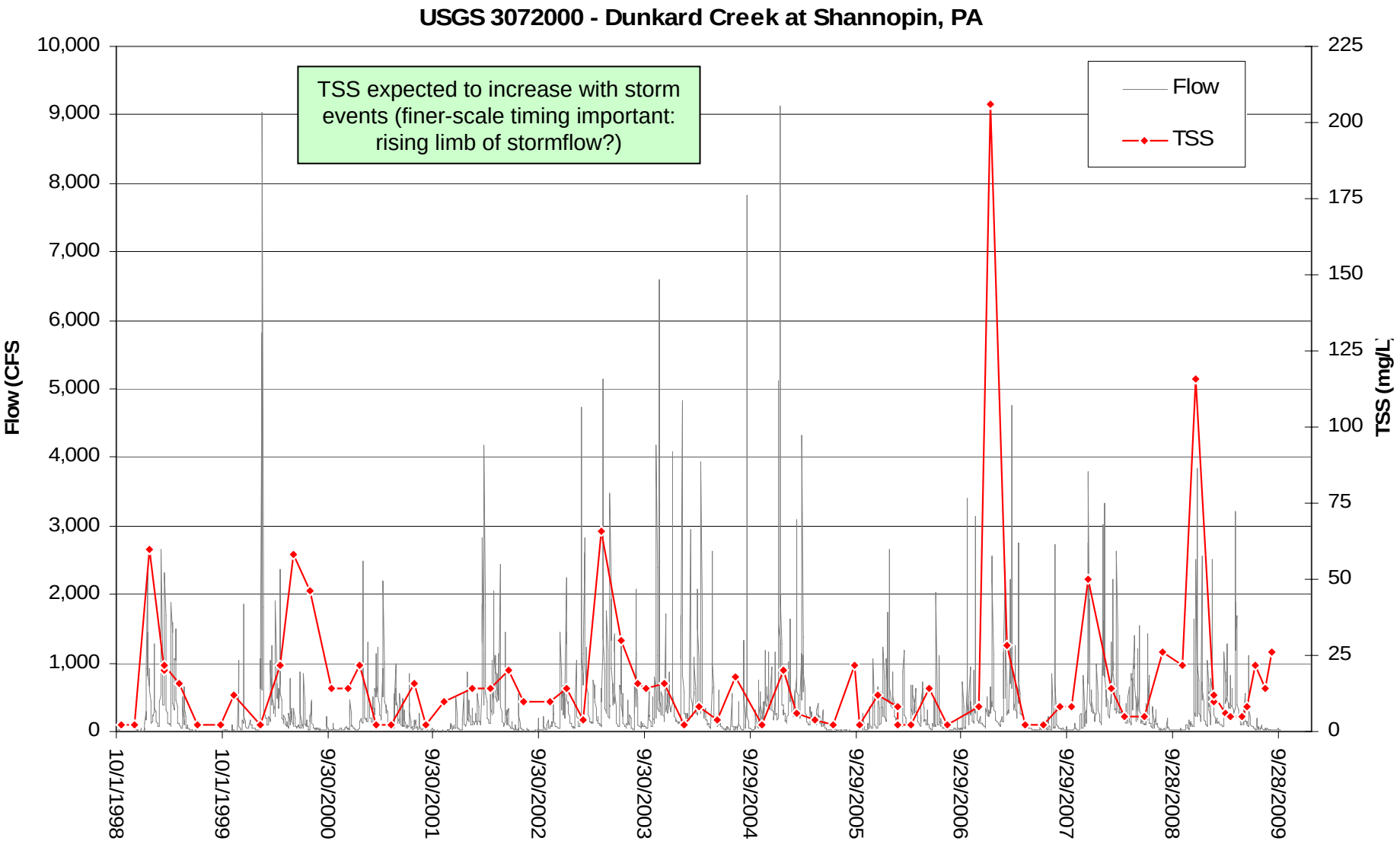


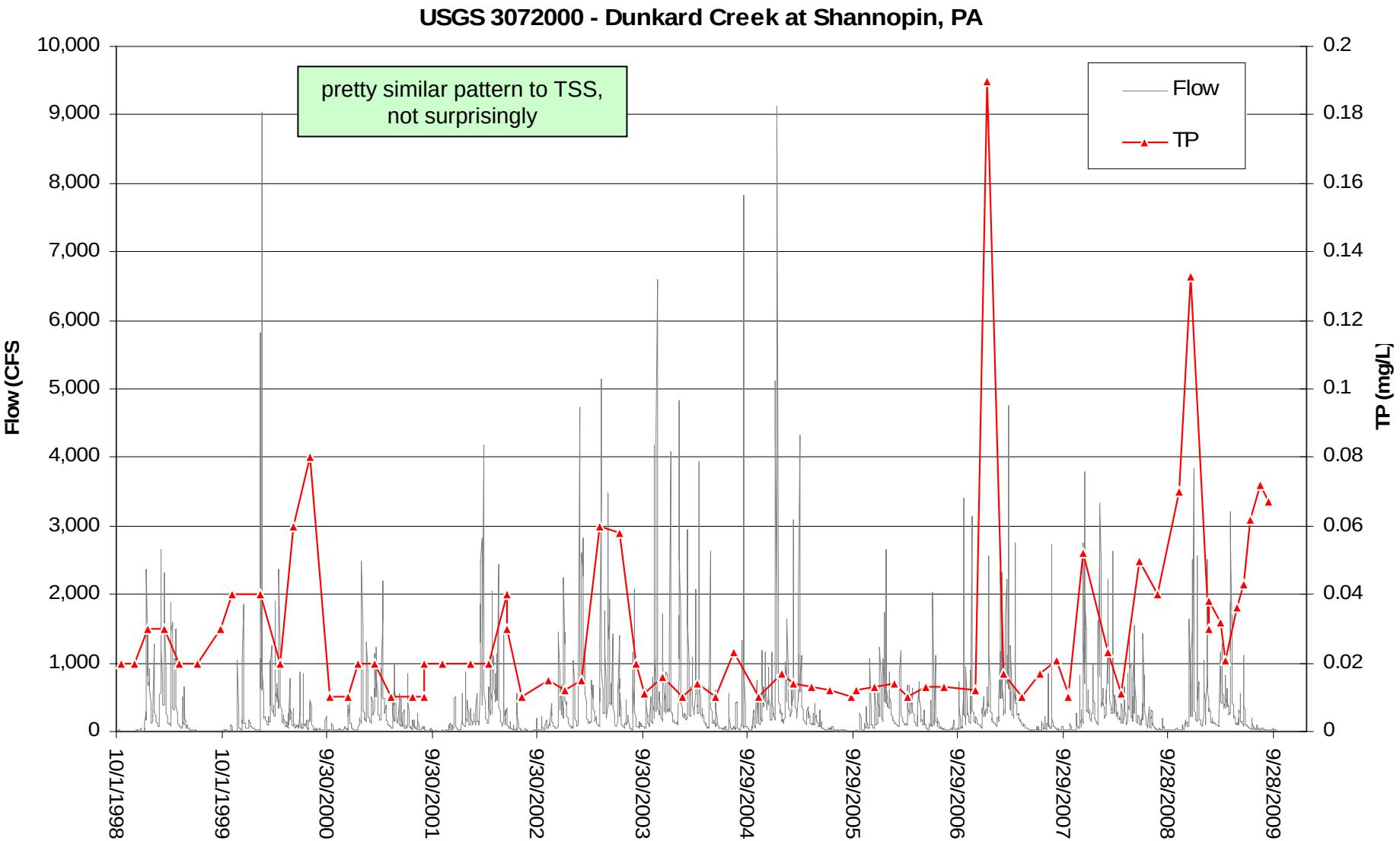
1998 – 2009
stream flow + chemistry

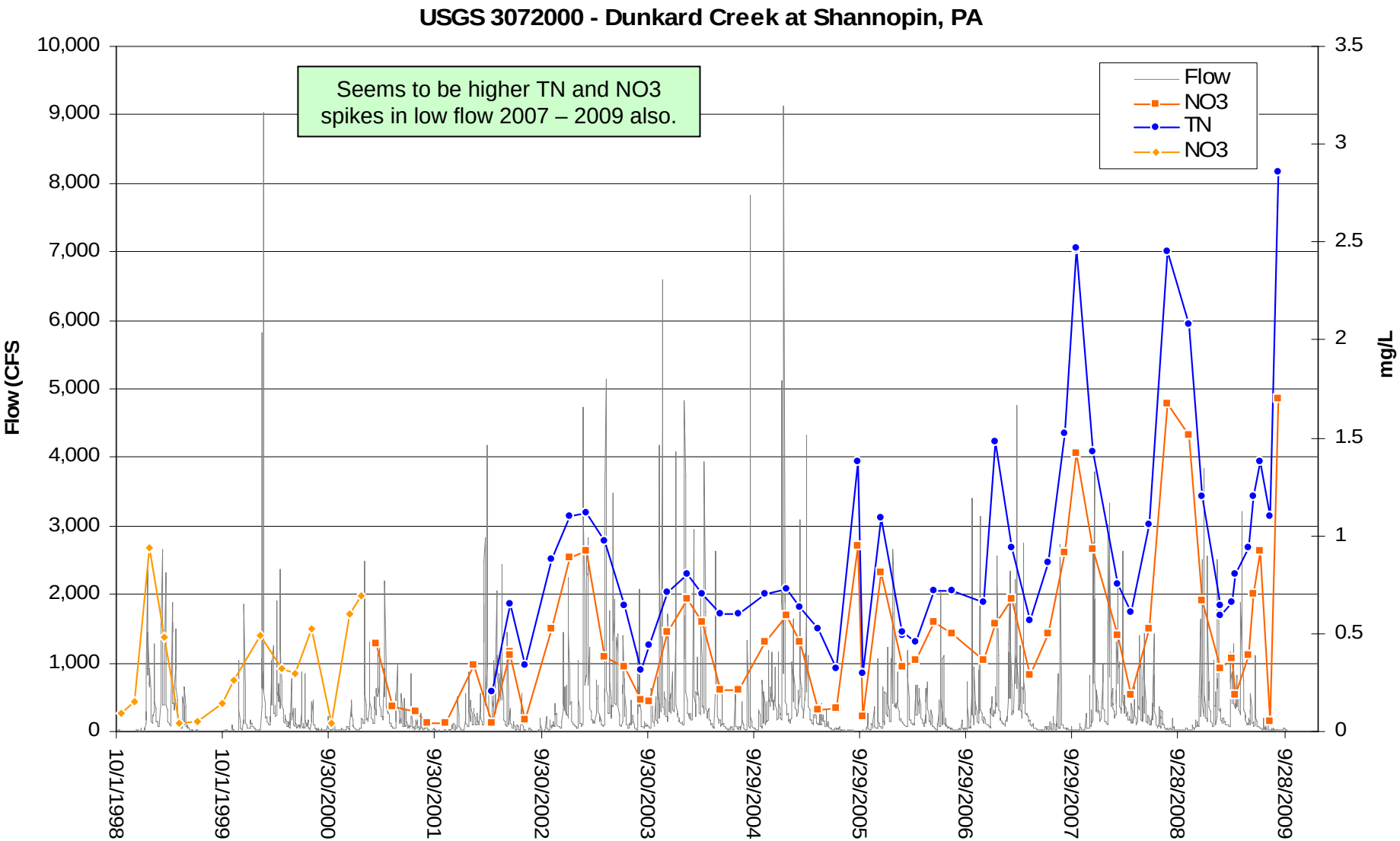


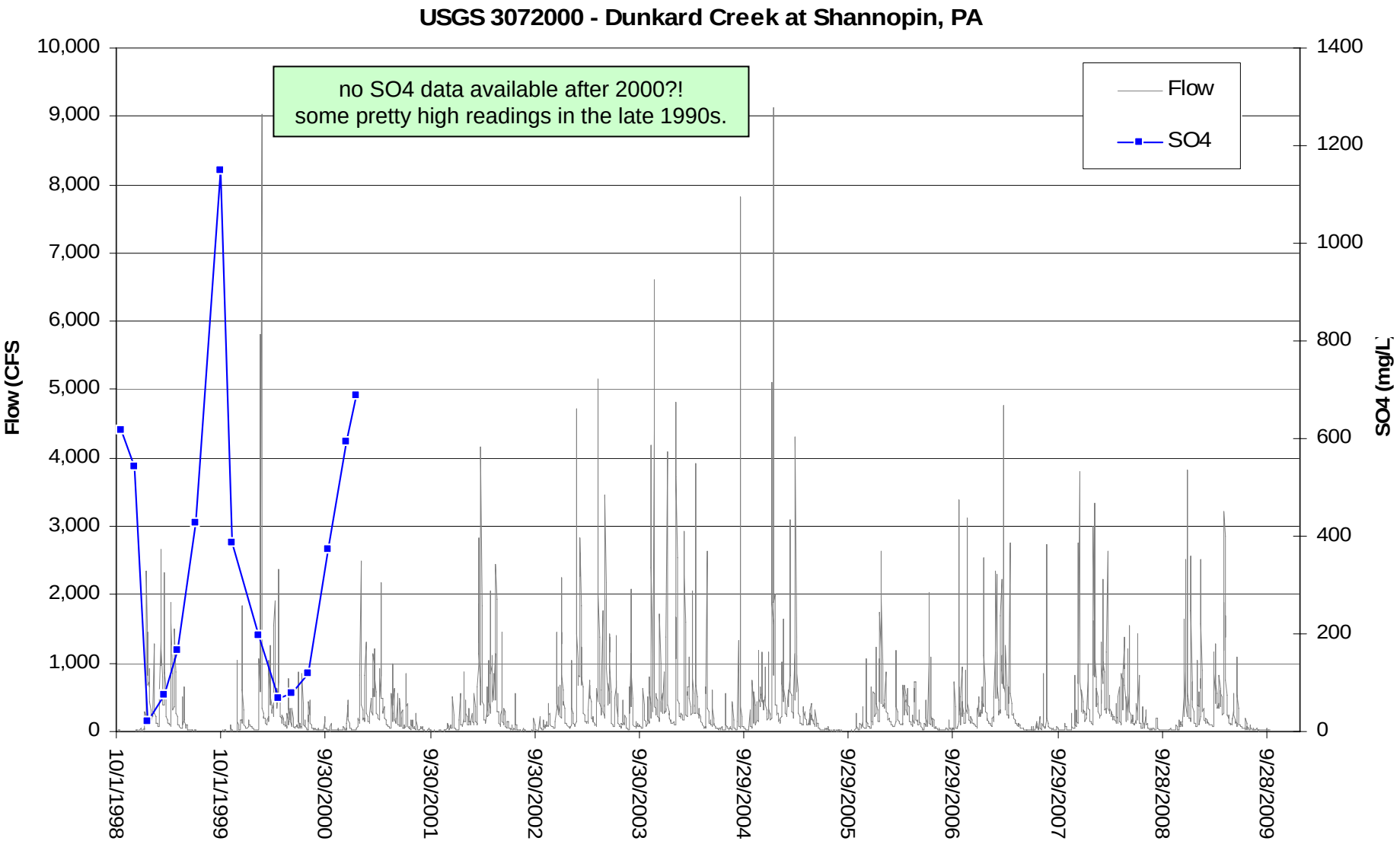

USGS 3072000 - Dunkard Creek at Shannopin, PA
pH seems to be gradually increasing, very slight – from low 7s to higher 7s; a few dips
Flow
pH
Flow (CFS
pH
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
12
11
10
9
8
7
6
5
4
3
2
1
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009

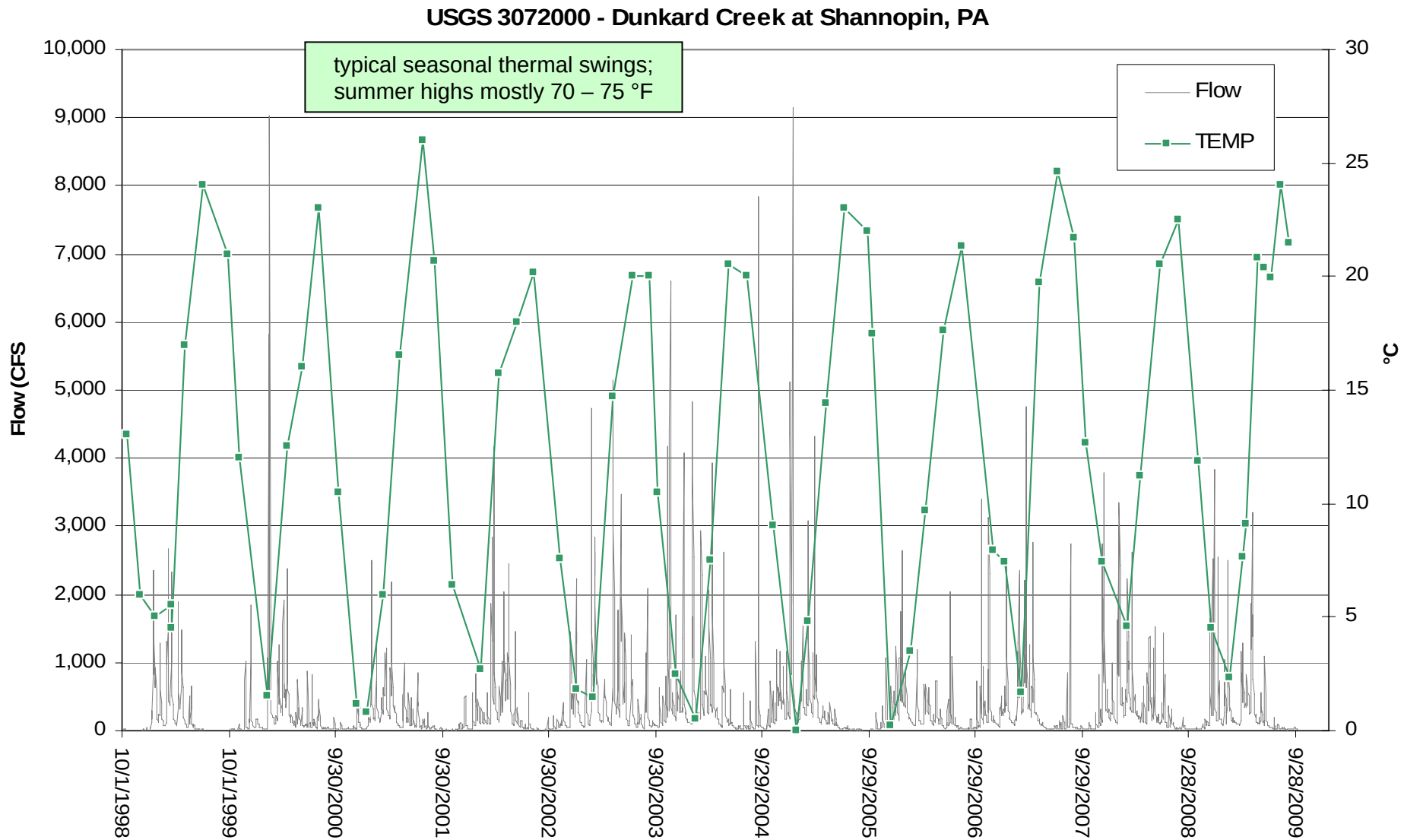

USGS 3072000 - Dunkard Creek at Shannopin, PA
Alkalinity runs between 60 and 140 usually; seems higher spikes recently (low flow 2007 – 2009).
Flow
ALK
Flow (CFS
ALK (mg/L as CaCO
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
180
160
140
120
100
80
60
40
20
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009

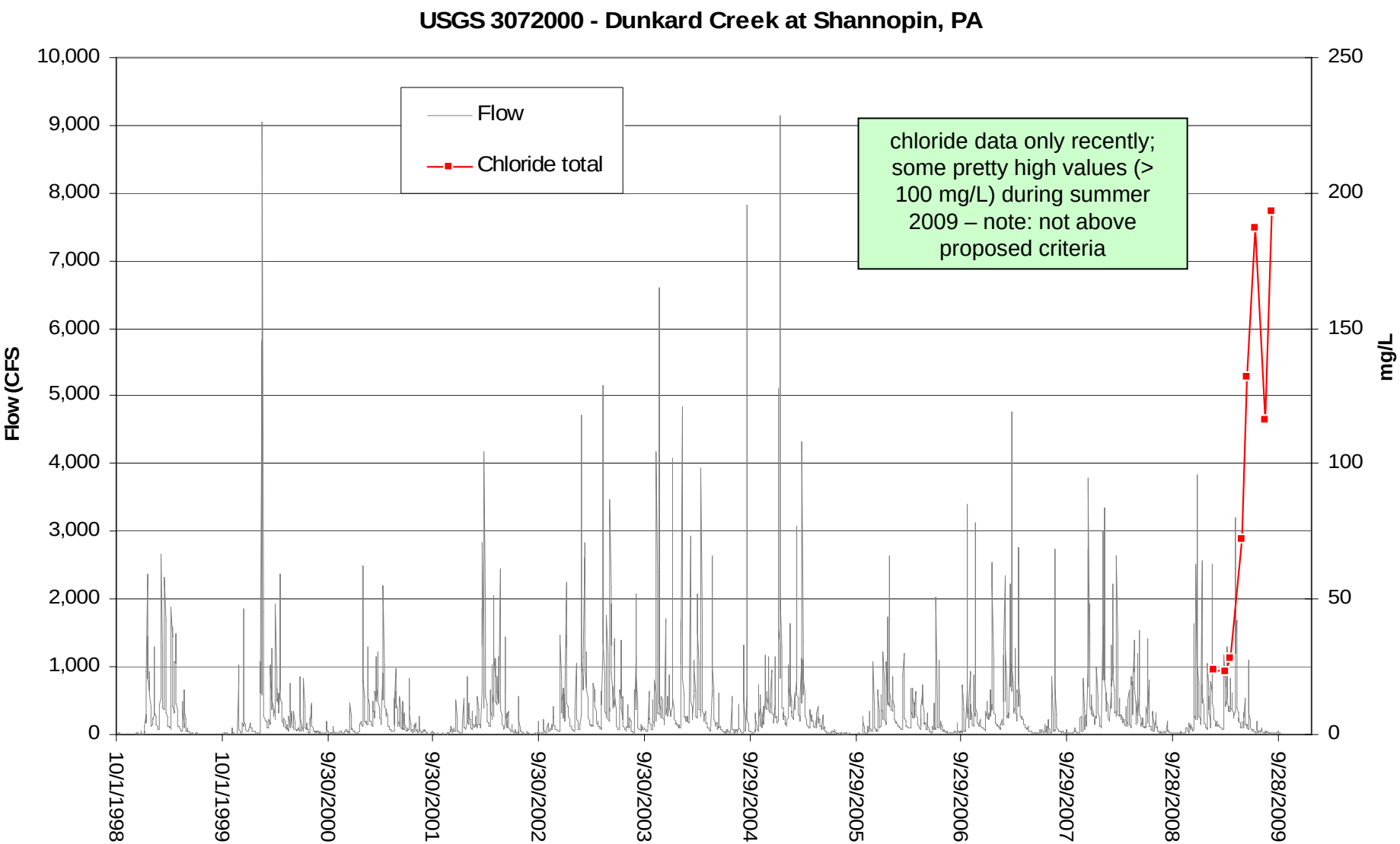

USGS 3072000 - Dunkard Creek at Shannopin, PA
TSS expected to increase with storm events (finer-scale timing important: rising limb of stormflow?)
Flow
TSS
Flow (CFS
TSS (mg/L
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
225
200
175
150
125
100
75
50
25
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009

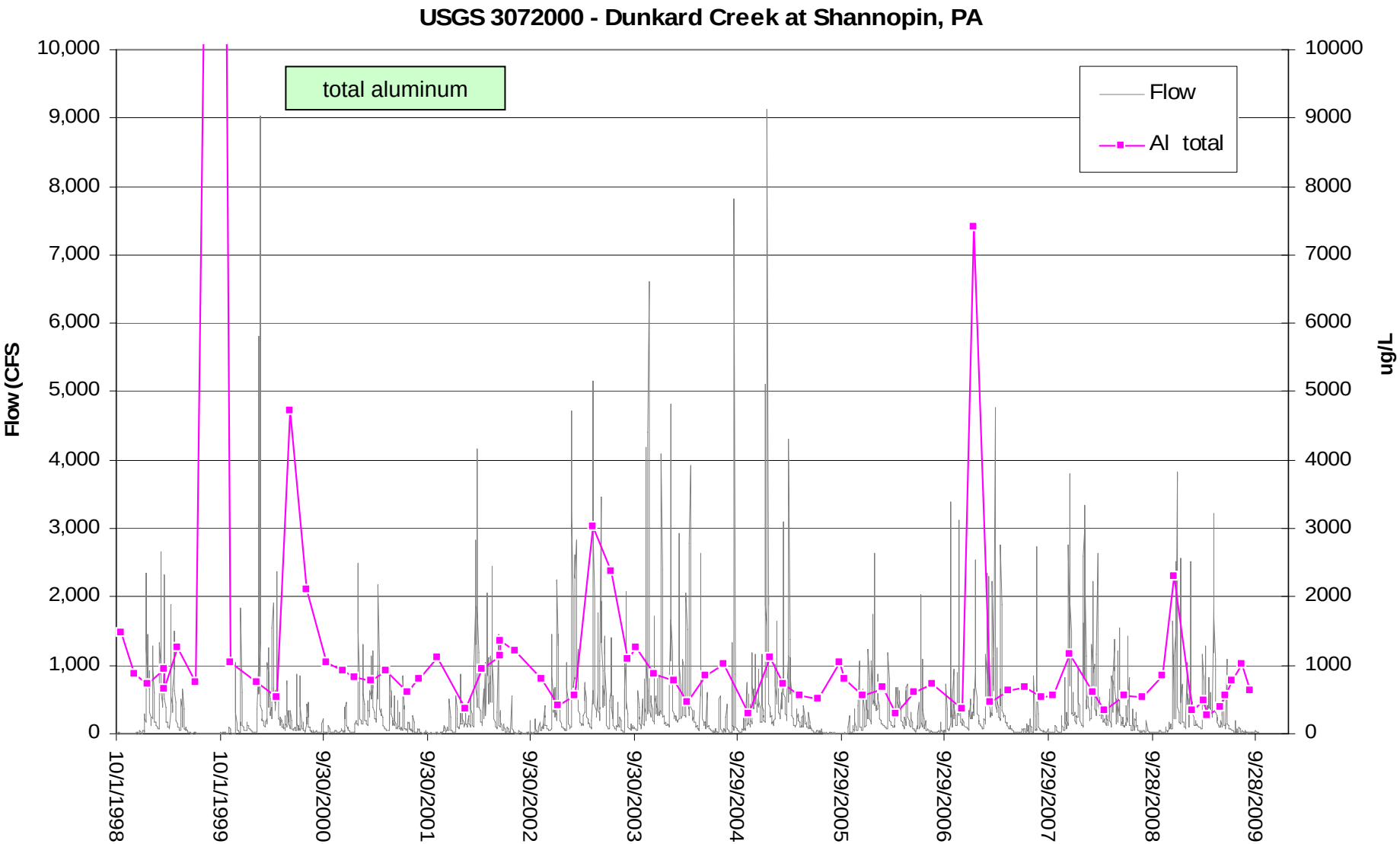

USGS 3072000 - Dunkard Creek at Shannopin, PA
pretty similar pattern to TSS, not surprisingly
Flow
TP
Flow (CFS
TP (mg/L)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009

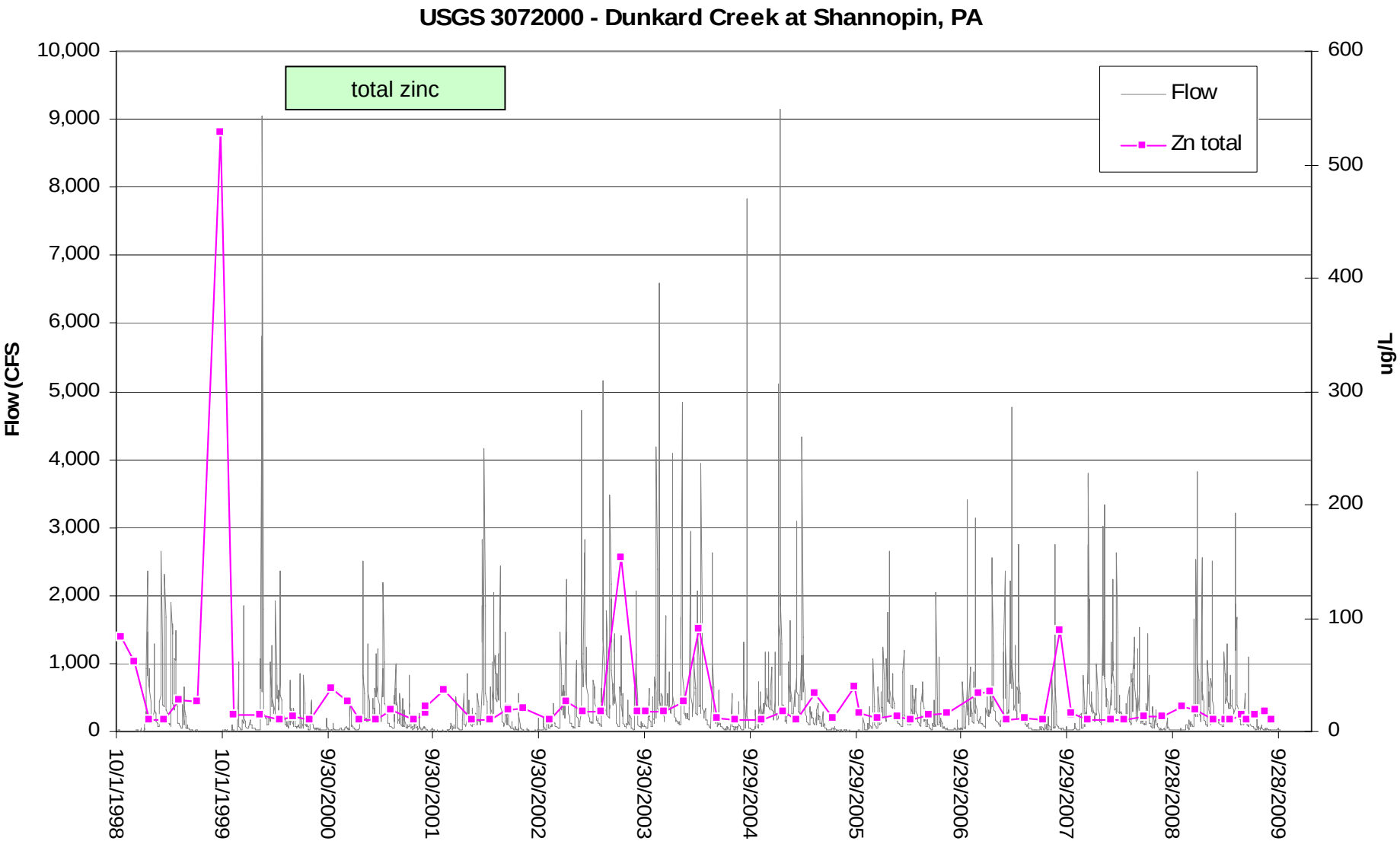

USGS 3072000 - Dunkard Creek at Shannopin, PA
Seems to be higher TN and NO3 spikes in low flow 2007 – 2009 also.
Flow
NO3
TN
NO3
Flow (CFS
mg/L
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
3.5
3
2.5
2
1.5
1
0.5
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
no SO4 data available after 2000?!
some pretty high readings in the late 1990s.
Flow
SO4
Flow (CFS
SO4 (mg/L
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1400
1200
1000
800
600
400
200
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
typical seasonal thermal swings;
summer highs mostly 70 – 75 °F
Flow
TEMP
Flow (CFS
C°
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
30
25
20
15
10
5
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
Flow
Chloride total
chloride data only recently; some pretty high values (> 100 mg/L) during summer 2009 – note: not above proposed criteria
Flow (CFS
mg/L
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
250
200
150
100
50
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
total aluminum
Flow
Al total
Flow (CFS
ug/l
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
total zinc
Flow
Zn total
Flow (CFS
ug/l
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
600
500
400
300
200
100
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
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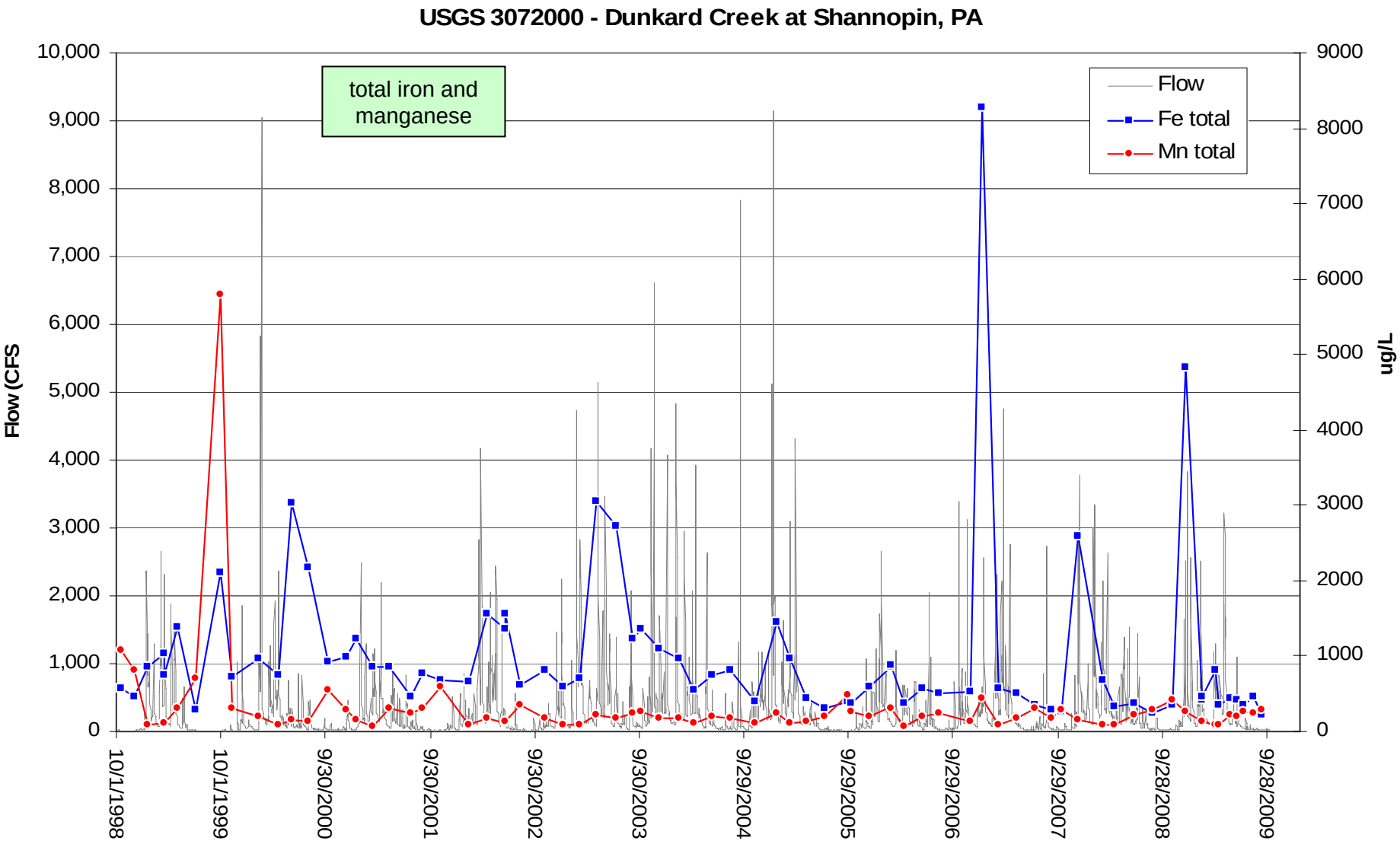
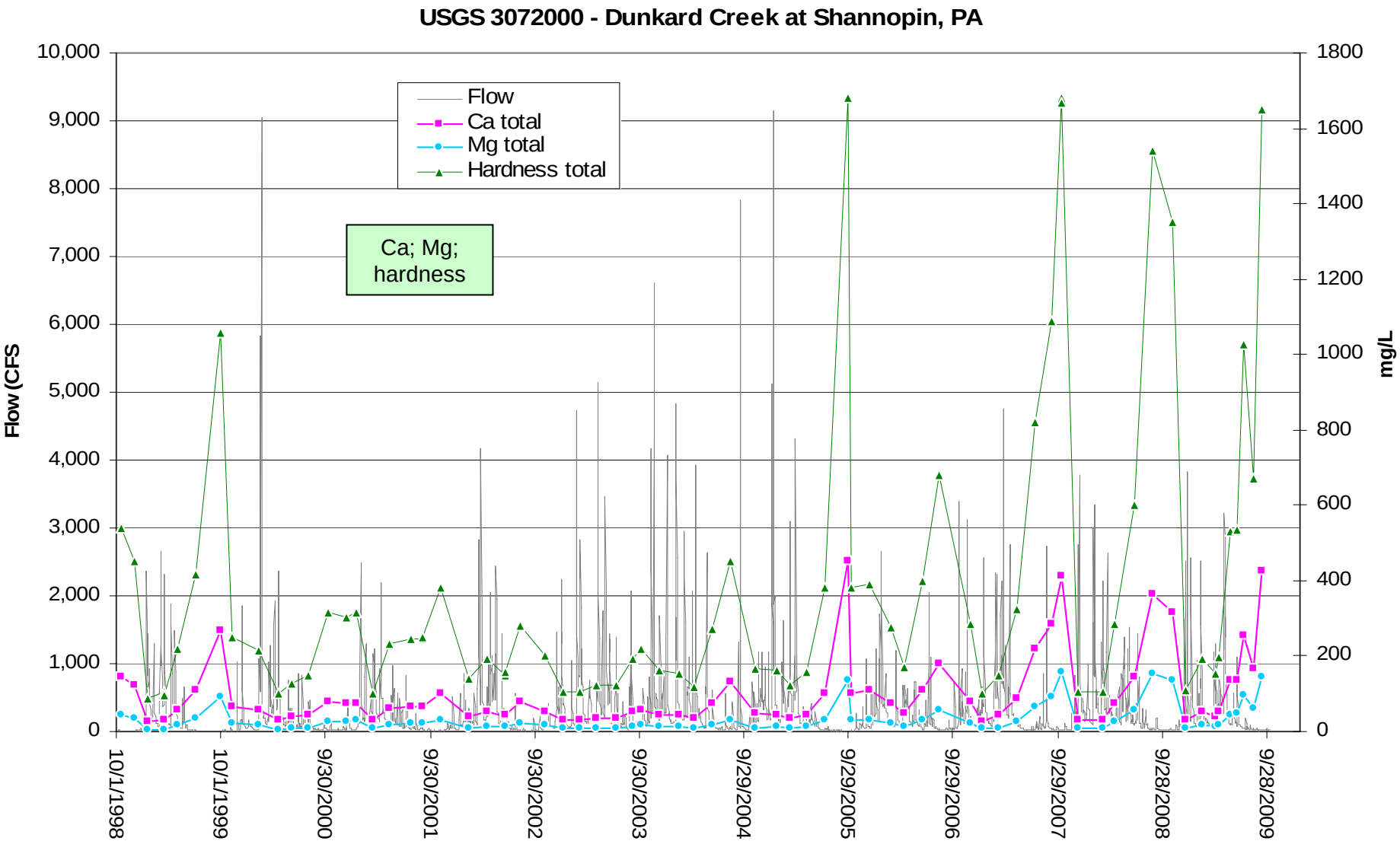
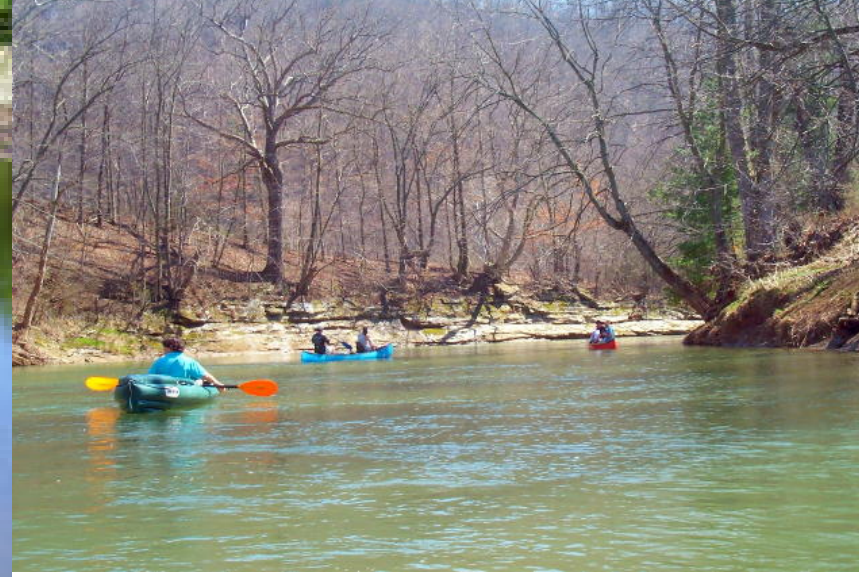
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
total iron and manganese
Flow
Fe total
Mn total
Flow (CFS
ug/l
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009


USGS 3072000 - Dunkard Creek at Shannopin, PA
Flow
Ca total
Mg total
Hardness total
Ca; Mg; hardness
Flow (CFS
mg/L
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1800
1600
1400
1200
1000
800
600
400
200
0
10/1/1998
10/1/1999
9/30/2000
9/30/2001
9/30/2002
9/30/2003
9/29/2004
9/29/2005
9/29/2006
9/29/2007
9/28/2008
9/28/2009



just the beginning?